Series 1961, No.32

Issued December 1965

SOIL SURVEY

Clarke County Mississippi

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
in cooperation with
MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

HOW TO USE THE SOIL SURVEY REPORT

THIS SOIL SURVEY of Clarke County, Miss., will serve several groups of readers. It will help farmers in planning the kind of management that will protect their soils and provide good yields; assist engineers in selecting sites for roads, buildings, ponds, and other structures; aid managers of forest and woodland; add to soil scientists' knowledge of soils; and help prospective buyers and others in appraising a farm or other tract.

Locating the Soils

At the back of this report is an index map and a soil map consisting of many sheets. On the index map are rectangles numbered to correspond to the sheets of the soil map so that the sheet showing any area can be located easily. On each map sheet, the soil boundaries are outlined and there is a symbol for each kind of soil. All areas marked with the same symbol are the same kind of soil. The soil symbol is inside the area if there is enough room; otherwise, it is outside the area and a pointer shows where it belongs. For example, an area on the map has the symbol RuB. The legend for the soil map shows that this symbol identifies Ruston fine sandy loam, 2 to 5 percent slopes. That soil and all others mapped in the county are described in the section "Descriptions of the Soils."

Finding Information

In the "Guide to Mapping Units" at the back of this report the soils are listed in the alphabetic order of their map symbols. This guide shows where to find a description of each soil and a discussion of its capability unit and woodland suitability group. It also shows where to find the acreage of each soil, the yields that can be expected, and information about engineering uses of soils.

Farmers and those who work with farmers can learn about the soils on a farm by reading the description of each soil and of its capability unit and other groupings. A convenient way of doing this is to turn to the soil map and list the soil symbols of a farm and then to use the "Guide to Mapping Units" in finding the pages where each soil and its groupings are described.

Foresters and others interested in woodland can refer to the subsection "Woodland." In that subsection the soils in the county are placed in groups according to their suitability for trees, and the management of each group is discussed.

Game managers, sportsmen, and others concerned with wildlife will find information about the main kinds of wildlife and their food and cover in the subsection "Wildlife."

Engineers and builders will find in the subsection "Engineering Applications" tables that give engineering descriptions of the soils in the county; name soil features that affect engineering practices and structures; and rate soils according to their suitability for several kinds of engineering work.

Scientists and others who are interested can read about how the soils were formed and how they are classified in the section "Formation and Classification of Soils."

Students, teachers, and other users will find information about soils and their management in various parts of the report, depending on their particular interest.

Newcomers in Clarke County will be especially interested in the section "General Soil Map," where broad patterns of soils are described. They may also be interested in the section "General Nature of the County," which gives additional information about the county.

* * * * *

Fieldwork for this survey was completed in 1961. Unless otherwise mentioned, all statements in the report refer to conditions in the county at the time the survey was in progress. The soil survey of Clarke County was made as part of the technical assistance furnished by the Soil Conservation Service to the Clarke County Soil Conservation District.

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SOIL SURVEY OF CLARKE COUNTY, MISSISSIPPI

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UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

CLARKE COUNTY is in the southeastern part of Mississippi and has a total land area of 697 square miles, or 446,080 acres. The county is about 25 miles long and 28 miles wide. Quitman, in about the center of the county, is the county seat. The distance by air from Quitman to the principal cities in the State are shown in figure 1.

Clarke County is mainly agricultural, but its cultivated acreage, particularly that in cotton and corn, has decreased in recent years. The land used for pasture and as woodland has increased. The county is one of the leading counties of the State in the production of pulpwood. In recent years employment in industrial plants has increased.

How Soils Are Mapped and Classified

Soil scientists made this survey to learn what kinds of soils are in Clarke County, where they are located, and how they can be used.

They went into the county knowing they likely would find many soils they had already seen, and perhaps some they had not. As they traveled over the county, they observed steepness, length, and shape of slopes; size and speed of streams; kinds of native plants or crops; kinds of rock; and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by roots of plants.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. To use this report efficiently, it is necessary to know the kinds of groupings most used in a local soil classification.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Boswell and Houston, for example, are the names of two soil series.

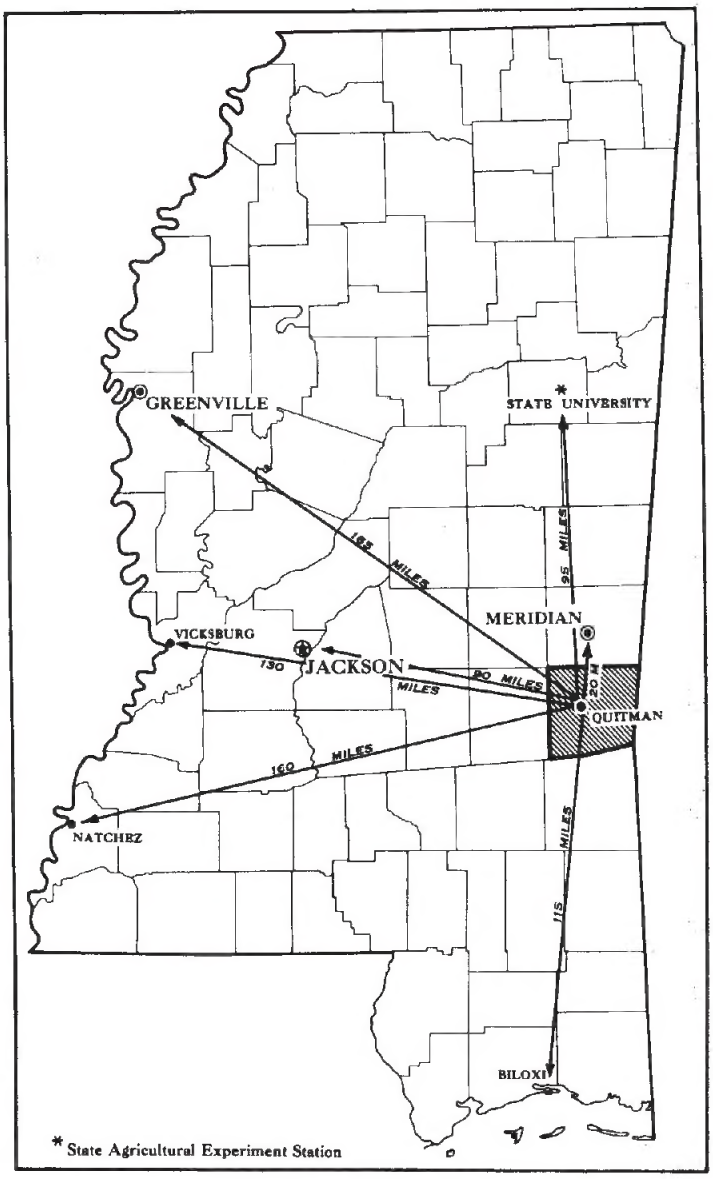

Figure 1.—Location of Clarke County in Mississippi.

All the soils in the United States having the same series name are essentially alike in those characteristics that go with their behavior in the natural, untouched landscape. Soils of one series can differ somewhat in texture of the surface soil and in slope, stoniness, or some other characteristic that affects use of the soils by man.

Many soil series contain soils that differ in texture of their surface layer. According to such differences in texture, separations called soil types are made. Within a series, all the soils having a surface layer of the same texture belong to one soil type. Boswell fine sandy loam and Boswell sandy clay loam are two soil types in the Boswell series. The difference in texture of their surface layer is apparent from their names.

Some soil types vary so much in slope, degree of erosion, number and size of stones, or some other feature affecting their use, that practical suggestions about their management could not be made if they were shown on the soil map as one unit. Such soil types are divided into phases. The name of a soil phase indicates a feature that affects management. For example, Boswell fine sandy loam, 2 to 5 percent slopes, is one of several phases of Boswell fine sandy loam, a soil type that ranges from nearly level to strongly sloping.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, trees, and other details that greatly help in drawing boundaries accurately. The soil map in the back of this report was prepared from the aerial photographs.

The areas shown on a soil map are called mapping units. On most maps detailed enough to be useful in planning management of farms and fields, a mapping unit is nearly equivalent to a soil type or a phase of a soil type. It is not exactly equivalent, because in most mapping units there are small, scattered bits of other kinds of soil that are impractical to show on the map.

In preparing some detailed maps, the soil scientists have a problem of delineating areas where different kinds of soils are so intricately mixed, and so small in size, that it is not practical to show them separately on the map. Therefore, they show this mixture of soils as one mapping unit and call it a soil complex. Ordinarily, a soil complex is named for the major kinds of soil in it, for example, Lauderdale-Boswell complex, 5 to 12 percent slopes. Soils of two or more series are also mapped in one unit as an undifferentiated soil group if their management needs are alike. Such a group is Bibb and Chastain fine sandy loams. Also, on most soil maps, areas are shown that are so rocky, so shallow, or so frequently worked by wind and water that they scarcely can be called soils. These areas are shown on a soil map like other mapping units, but they are given descriptive names, such as Gullied land, acid, or Sandy alluvial land, and are called land types rather than soils.

While a soil survey is in progress, samples of soils are taken, as needed, for laboratory measurements and for engineering tests. Laboratory data from the same kinds of soils in other places are assembled. Data on yields of crops under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soils. Yields under defined management are estimated for all the soils.

But only part of a soil survey is done when the soils have been named, described, and delineated on the map, and the laboratory data and yield data have been assembled. The mass of detailed information then needs to be organized in a way that it is readily useful to different groups of readers, among them farmers, ranchers, managers of woodland, engineers, and homeowners. Grouping soils that are similar in suitability for each specified use is the method of organization commonly used in the soil survey reports. On the basis of yield and practice tables and other data, the soil scientists set up trial groups, and test them by further study and by consultation with farmers, agronomists, engineers, and others. Then, the scientists adjust the groups according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under present methods of use and management.

General Soil Map

After study of the soils in a locality and the way they are arranged, it is possible to make a general map that shows several main patterns of soils, called soil associations. Such a map is the colored general soil map in the back of this report. Each soil association, as a rule, contains a few major soils and several minor ones in a pattern that is characteristic, though not strictly uniform.

The soils in any one association are likely to differ greatly in some properties; for example, slope, depth, stoniness, or natural drainage. Thus, the general map does not show the kind of soil at any particular place, but a pattern that has several kinds of soils.

The soil associations are named for the major soil series in them, but as already noted, soils of other series may also be present. Soils of the major series in one soil association may also be present in other associations, but in a different pattern.

The general map is useful to people who want a general idea of the soils, who want to compare different parts of the county, or who want to know the possible location of good-sized areas suitable for certain kinds of farming or other land use.

Six soil associations are shown on the general soil map. Nearly level sandy soils are on the flood plains of the large streams. Other nearly level soils, locally called hogwallow prairie, are in the southern part of the county. They are underlain by plastic clay or by soft, chalky limestone. The other four associations contain mainly sandy loams that range from gently sloping to steep.

1. Vaiden-Eutaw-Sumter-Houston association: Moderately well drained to poorly drained clays

This soil association is made up of broad, level or nearly level areas that cover about 8 percent of the county and occur in the southern part. Much of this association is locally called hogwallow prairie and consists of Eutaw and Vaiden soils on small ridges and in depressions.

The soils of this association are clay or silt loam that is underlain by alkaline clay or chalk. The Vaiden soils are somewhat poorly drained. Their surface layer is dark-gray to grayish-brown silt loam that is underlain by olive to yellowish-brown clay. The Eutaw soils are poorly drained. They have a surface layer of dark-gray to grayish-brown clay and a subsoil of mottled dark-gray to pale-olive clay that is firm and plastic. The Sumter soils are moderately well drained. Their surface layer of grayish-brown clay is underlain by olive clay that is underlain, in turn, by chalk. The Houston soils are moderately well drained. They have a surface layer of very dark gray to black clay and a subsoil of dark-gray to olive, alkaline clay.

Minor soils in this association are the Houlka and West Point soils on narrow bottom lands and the Oktibbeha soils on uplands. The Houlka soils are somewhat poorly drained, and the West Point and Oktibbeha soils are moderately well drained.

Vaiden soils make up about 40 percent of the association; Eutaw soils, 20 percent; Sumter soils, 15 percent; Houston soils, 10 percent; and the minor soils, 15 percent.

The Vaiden and Eutaw soils are mostly in pines and mixed hardwoods, and the Sumter and Houston soils are mostly in grass. Most of the woodland is owned by lumber companies or by individuals who own large tracts. Timber is harvested for sawlogs or pulpwood. The areas in grass are mostly large ranges owned by farmers. Growing row crops is impractical in this association because surface and internal drainage are slow. If the soils are fertilized and seeded, they produce good pasture and hay.

2. Bibb-Mantachie-Iuka association: Poorly drained to moderately well drained sandy soils on flood plains

This soil association is on frequently flooded bottom lands along the larger streams. It makes up about 22 percent of the county.

In most of this association the surface layer is fine sandy loam, but in small areas it is loam or silt loam. The Bibb soils are most extensive. They are poorly drained and have a gray sandy loam surface layer and a gray, mottled sandy loam to sandy clay loam subsoil. The Mantachie soils are somewhat poorly drained. Their surface layer is grayish-brown sandy loam, and their subsoil is yellowish-brown to brown sandy loam to sandy clay loam that is mottled with gray at a depth of 6 to 10 inches. The Iuka soils are moderately well drained. They have a dark grayish-brown to brown sandy loam surface layer and a subsoil of yellowish-brown to brown sandy loam to sandy clay loam that is mottled with gray at a depth of about 15 inches.

Minor soils of this association are the poorly drained Chastain and Johnston soils along narrow streams and the Bruno soils and Sandy alluvial land along the larger streams.

Bibb soils cover about 50 percent of the association; Mantachie soils, 25 percent; Iuka soils, 20 percent; and the minor soils, 5 percent.

Most of this association is in hardwoods; only small areas are in pasture or crops. Cleared areas of Iuka and Mantachie soils are used for corn, cotton, and pasture. The Bibb soils are used for pasture. The wooded areas are mostly large holdings. The farms within this association are small and individually owned.

3. Savannah-Ora-Pheba-Stough association: Moderately well drained and somewhat poorly drained sandy loams on broad, gently sloping uplands

This association consists of long, broad, nearly level to gently sloping ridgetops, moderately sloping side slopes, and draws that contain narrow strips of local alluvium. The association accounts for 7 percent of the county and occurs in the western and southern parts.

In the nearly level to gently sloping areas are the somewhat poorly drained Pheba and Stough soils and the moderately well drained Savannah soils. The surface layer of all these soils is dark-gray to pale-brown sandy loam. The Pheba and Stough soils have a grayish-brown to yellow sandy loam to loam subsoil that contains a fragipan at a depth of 10 to 24 inches. The Savannah soils have a yellowish-brown fine sandy loam to loam subsoil that contains a fragipan at a depth of 18 to 36 inches. The Ora soils are moderately well drained. They are moderately sloping and have a dark grayish-brown surface layer. Their subsoil is strong-brown to yellowish-red sandy loam to clay loam. A sandy loam or loam fragipan occurs at a depth of 18 to 36 inches.

Savannah soils make up about 40 percent of the association; Ora soils, 35 percent; Pheba soils, 17 percent; Stough soils, 5 percent; and Ruston, Shubuta, Tilden, Prentiss, and Bibb soils together, about 3 percent.

Most of this association is in row crops and pasture. Most of the farms are small, well managed, and owned and operated by the farmer. They are mostly of the general type, though there are a few small beef-cattle farms. The chief row crops are cotton and corn. These soils are well suited to most crops commonly grown in the county, but erosion is a hazard on the steeper slopes. Pasture grasses grow well on these slopes and provide cover that controls erosion. All the soils in this association are well suited to pine trees.

4. Ruston-Orangeburg association: Well-drained fine sandy loams on upland ridgetops and steep side slopes

This soil association consists of long, fairly wide ridgetops, steep side slopes, and draws that contain narrow strips of local alluvium. The association covers about 17 percent of the county and occurs in the northern part and in the southwestern corner.

The soils of this association have a surface layer of gray to grayish-brown fine sandy loam. The subsoil of Ruston soils is yellowish-red to red sandy loam to clay loam, and that of Orangeburg soils is red to dark-red sandy loam to clay loam.

On the uplands the minor soils of this association are the excessively drained Eustis soils and the moderately well drained Ora soils. In the narrow draws are the poorly drained Bibb soils and the somewhat poorly drained Mantachie soils.

Ruston soils occupy about 65 percent of the association; Orangeburg soils, 25 percent; and the minor soils, about 10 percent.

The more gentle slopes are in cultivated crops but are also suited to pasture and pine trees. The main crops in the association are cotton, corn, and vegetables. Because

the steeper slopes are highly susceptible to erosion, they are generally in pasture or trees. Sold annually are approximately 30,000 bushels of peaches that are grown in a few large orchards. Most of this association is in small farms of the general type.

5. Ruston-Shubuta-Ora-Boswell association: Well drained and moderately well drained sandy loams on narrow ridgetops and steep side slopes

This soil association is on the long, narrow ridgetops and the steep side slopes. It covers about 45 percent of the county, generally in the eastern part and in the northwestern corner.

The Ruston soils are well drained and the Shubuta, Ora, and Boswell soils are moderately well drained. All these soils have a dark-gray to brown sandy loam surface layer. The Ruston soils are dominant. Their subsoil is yellowish-red to red sandy loam to clay loam. The Shubuta soils have a subsoil of red heavy sandy clay loam to clay. The subsoil of the Ora soils is strong-brown to yellowish-red sandy loam to clay loam that is underlain by a fragipan at a depth of 22 to 36 inches. The Boswell soils have a subsoil of yellowish-red to red clay loam to clay that is mottled with gray at a depth of 14 to 27 inches.

On the uplands the minor soils of this association are the moderately well drained Savannah soils. In the narrow bottom lands along the small streams are the poorly drained Bibb soils and the somewhat poorly drained Mantachie soils.

Ruston soils occupy about 40 percent of this association; Shubuta soils, 30 percent; Ora soils, 15 percent; Boswell soils, 10 percent; and the minor soils, about 5 percent.

Most of this association is in large timber holdings that are owned by lumber companies and individual landowners. Pine trees are harvested for sawlogs and pulpwood. Because the steeper slopes are highly susceptible to erosion, they are best suited to pasture and pine trees. The more gentle slopes are well suited to row crops. The few small general farms are individually owned.

6. Lauderdale-Boswell association: Moderately well drained to excessively drained soils on narrow ridgetops and steep side slopes

This soil association is on the narrow ridgetops and steep side slopes. It covers about 1 percent of the county and occurs in three small areas in the east-central and northern parts.

The Lauderdale soils are well drained. Their surface layer is dark grayish-brown stony fine sandy loam. Their pale-brown sandy clay loam subsoil contains much partly weathered sandstone and is underlain by horizontal layers of sandstone. The Boswell soils are moderately well drained. Their surface layer is grayish-brown to brown sandy loam. Their subsoil is yellowish-red to red clay that is mottled with gray at a depth of 14 to 27 inches.

On the uplands the minor soils in this association are the moderately well drained Shubuta soils and the well drained Ruston soils. The poorly drained Bibb soils are in the narrow draws.

Lauderdale soils cover about 50 percent of this association; Boswell soils, 40 percent; and minor soils, 10 percent.

The soils in this association are well suited to the pine trees that are grown and sold for sawlogs and pulpwood. The large tracts of timber making up most of this area are owned by lumber companies and individual landowners. Because the Boswell soils have a heavy clay subsoil and the Lauderdale soils are stony, this soil association is not suited to cultivated crops.

Descriptions of the Soils

This section describes the soil series (groups of soils) and single soils (mapping units) of Clarke County. The acreage and proportionate extent of each mapping unit are given in table 1.

The procedure of this section is first to describe the soil series, and then the mapping units of that series. Thus, to get full information about any one mapping unit, it is necessary to read the description of that unit and also the description of the soil series to which it belongs. As mentioned in the section "How Soils Are Mapped and Classified," not all mapping units are members of a soil series. Gullied land and Sandy alluvial land are miscellaneous land types and do not belong to a soil series but, nevertheless, are listed in alphabetic order along with the soil series.

Following the name of each mapping unit, there is a symbol in parentheses. This symbol identifies the mapping unit on the detailed soil map. At the end of each soil description, symbols in parentheses identify the capability unit and woodland suitability group in which the soil has been placed. The page on which each grouping is described can be found readily by referring to the "Guide to Mapping Units" at the back of the report.

Soil scientists, engineers, students, and others who want more detailed descriptions of soil series should turn to the section "Formation and Classification of Soils." Many terms used in the soil descriptions and other sections of the report are defined in the Glossary.

Angie Series

The Angie series consists of nearly level to moderately sloping, somewhat poorly drained soils of the Coastal Plain uplands. In uneroded areas, these soils have a dark grayish-brown to brown fine sandy loam surface layer. The upper subsoil is yellow to yellowish-brown heavy sandy clay loam to clay, and the lower subsoil is mottled gray to brownish-yellow clay loam to clay.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate to high.

Angie soils lie next to or near the Shubuta, Ora, Savannah, and Boswell soils. They do not have a fragipan, as do the Ora and Savannah soils. Angie soils are not so well drained as the Shubuta and Boswell soils and do not have a reddish subsoil.

The Angie soils are widely distributed throughout the county. The native vegetation consists of mixed pines and hardwoods with an understory of dogwood, huckleberry, shrubs, vines, and grasses. Most of the acreage is wooded, but some of the more gentle slopes are cultivated or pastured.

Angie fine sandy loam, 5 to 8 percent slopes, eroded (AnC2).—This soil occurs on uplands and is somewhat poorly drained. Its subsoil is friable or firm, yellow to

TABLE 1.--APPROXIMATE ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Soil	Area	Extent	Soil	Area	Extent
	Acres	Percent		Acres	Percent
Angie fine sandy loam, 0 to 2 percent slopes	250	(1/)	Houston clay, 0 to 2 percent slopes	1,300	0.3
Angie fine sandy loam, 2 to 5 percent slopes	1,746	0.4	Houston clay, 2 to 5 percent slopes	1,253	.3
Angie fine sandy loam, 5 to 8 percent slopes, eroded	1,989	.4	Iuka fine sandy loam	2,894	.6
Bibb soils	7,467	1.7	Iuka soils; local alluvium	2,593	.6
Bibb and Chastain fine sandy loams	46,692	10.5	Johnston loam	853	.2
Boswell fine sandy loam, 2 to 5 percent slopes	379	(1/)	Lauderdale stony fine sandy loam, 5 to 8 percent slopes	340	(1/)
Boswell fine sandy loam, 2 to 5 percent slopes, eroded	2,121	.5	Lauderdale stony fine sandy loam, 12 to 45 percent slopes	1,027	.2
Boswell fine sandy loam, 5 to 8 percent slopes	925	.2	Lauderdale-Boswell complex, 5 to 12 percent slopes	809	.2
Boswell fine sandy loam, 5 to 8 percent slopes, eroded	3,391	.8	Lauderdale-Boswell complex, 17 to 45 percent slopes	2,922	.7
Boswell fine sandy loam, 8 to 12 percent slopes	505	.1	Lauderdale-Eustis complex, 8 to 12 percent slopes	330	(1/)
Boswell fine sandy loam, 8 to 12 percent slopes, eroded	2,723	.6	Lauderdale-Eustis complex 12 to 45 percent slopes	7,802	1.7
Boswell sandy clay loam, 5 to 8 percent slopes, severely eroded	642	.1	Leaf fine sandy loam	2,283	.5
Boswell sandy clay loam, 8 to 12 percent slopes, severely eroded	585	.1	Mantachie fine sandy loam	3,950	.9
Boswell, Shubuta, and Cuthbert fine sandy loams, 5 to 12 percent slopes	2,275	.5	Mantachie soils, local alluvium	7,094	1.6
Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes	28,538	6.4	Mantachie, Bibb, and Iuka soils	36,835	8.3
Bruno loamy fine sand	4,126	.9	Mashulaville loam	495	.1
Cahaba fine sandy loam, 0 to 2 percent slopes	531	.1	Mashulaville fine sandy loam, terrace	6,049	1.4
Cahaba fine sandy loam, 2 to 5 percent slopes	424	(1/)	Ora fine sandy loam, 0 to 2 percent slopes	211	(1/)
Cahaba fine sandy loam, 2 to 5 percent slopes, eroded	918	.2	Ora fine sandy loam, 2 to 5 percent slopes	653	.1
Cahaba fine sandy loam, 5 to 12 percent slopes, eroded	314	(1/)	Ora fine sandy loam, 2 to 5 percent slopes, eroded	5,885	1.3
Eustis loamy sand, terrace	7,972	1.8	Ora fine sandy loam, 5 to 8 percent slopes	572	.1
Eustis loamy sand, 2 to 5 percent slopes	1,135	.3	Ora fine sandy loam, 5 to 8 percent slopes, eroded	5,762	1.3
Eustis loamy sand, 5 to 8 percent slopes	2,829	.6	Ora fine sandy loam, 8 to 12 percent slopes, eroded	798	.2
Eustis loamy sand, 8 to 12 percent slopes	3,120	.7	Orangeburg fine sandy loam, 5 to 8 percent slopes	444	.1
Eustis loamy sand, 12 to 35 percent slopes	20,356	4.6	Orangeburg fine sandy loam, 5 to 8 percent slopes, eroded	671	.1
Eutaw clay, deep	288	(1/)	Orangeburg fine sandy loam, 5 to 8 percent slopes, severely eroded	179	(1/)
Eutaw-Vaiden clays, deep	9,019	2.0	Orangeburg fine sandy loam, 8 to 12 percent slopes	750	.1
Flint fine sandy loam, loamy substratum, 0 to 2 percent slopes	382	(1/)	Orangeburg fine sandy loam, 8 to 12 percent slopes, severely eroded	175	(1/)
Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes	248	(1/)	Orangeburg fine sandy loam, 12 to 17 percent slopes	1,616	.4
Gullied land, acid	325	(1/)	Orangeburg fine sandy loam, 17 to 35 percent slopes	912	.2
Gullied land, alkaline	424	(1/)	Pheba fine sandy loam, 0 to 2 percent slopes	3,020	.7
Houlka clay	3,365	.8	Pheba fine sandy loam, 2 to 5 percent slopes	1,396	.3

See footnote at end of table.

TABLE 1.--APPROXIMATE ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Soil	Area	Extent	Soil	Area	Extent
	Acres	Percent		Acres	Percent
Prentiss fine sandy loam, 0 to 2 percent slopes	3,882	0.9	Shubuta fine sandy loam, 8 to 12 percent slopes	3,886	0.9
Prentiss fine sandy loam, 2 to 5 percent slopes	1,655	.4	Shubuta fine sandy loam, 8 to 12 percent slopes, eroded	5,438	1.2
Ruston fine sandy loam, 0 to 2 percent slopes	357	(1/)	Shubuta sandy clay loam, 5 to 8 percent slopes, severely eroded	1,993	.4
Ruston fine sandy loam, 2 to 5 percent slopes	1,889	.4	Shubuta sandy clay loam, 8 to 12 percent slopes, severely eroded	1,721	.4
Ruston fine sandy loam, 2 to 5 percent slopes, eroded	9,789	2.2	Stough fine sandy loam, 0 to 2 percent slopes	11,154	2.5
Ruston fine sandy loam, 5 to 8 percent slopes	9,305	2.1	Sumter clay, 2 to 5 percent slopes, eroded	1,078	.2
Ruston fine sandy loam, 5 to 8 percent slopes, eroded	16,850	3.8	Sumter clay, 2 to 5 percent slopes, severely eroded	397	(1/)
Ruston fine sandy loam, 5 to 8 percent slopes, severely eroded	1,356	.3	Sumter clay, 5 to 8 percent slopes, eroded	475	.1
Ruston fine sandy loam, 8 to 12 percent slopes	5,045	1.1	Sumter clay, 5 to 12 percent slopes, severely eroded	1,453	.3
Ruston fine sandy loam, 8 to 12 percent slopes, eroded	8,338	1.9	Tilden fine sandy loam, 0 to 2 percent slopes	1,367	.3
Ruston fine sandy loam, 8 to 12 percent slopes, severely eroded	1,652	.4	Tilden fine sandy loam, 2 to 5 percent slopes	773	.2
Ruston fine sandy loam, 12 to 17 percent slopes	16,298	3.7	Tilden fine sandy loam, 2 to 5 percent slopes, eroded	1,679	.4
Ruston fine sandy loam, 12 to 17 percent slopes, eroded	5,885	1.3	Tilden fine sandy loam, 5 to 8 percent slopes, eroded	279	(1/)
Ruston fine sandy loam, 12 to 17 percent slopes, severely eroded	775	.2	Vaiden clay, deep, 0 to 2 percent slopes	900	.2
Ruston fine sandy loam, 17 to 35 percent slopes	22,349	5.0	Vaiden clay, deep, 2 to 5 percent slopes	1,230	.3
Ruston fine sandy loam, 17 to 35 percent slopes, eroded	3,351	.8	Vaiden clay, deep, 2 to 5 percent slopes, eroded	4,975	1.1
Sandy alluvial land	3,208	.7	Vaiden clay, deep, 5 to 8 percent slopes, eroded	2,437	.5
Savannah fine sandy loam, 0 to 2 percent slopes	2,586	.6	Vaiden clay, deep, 8 to 12 percent slopes, eroded	1,154	.3
Savannah fine sandy loam, 2 to 5 percent slopes	1,072	.2	Vaiden and Oktibbeha silt loams, deep, 0 to 2 percent slopes	406	(1/)
Savannah fine sandy loam, 2 to 5 percent slopes, eroded	3,892	.9	Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes	2,835	.6
Savannah fine sandy loam, 5 to 8 percent slopes, eroded	431	(1/)	Vaiden and Oktibbeha silt loams, deep, 5 to 8 percent slopes	4,575	1.0
Shubuta fine sandy loam, 2 to 5 percent slopes	387	(1/)	Vaiden and Oktibbeha silt loams, deep, 8 to 12 percent slopes	1,213	.3
Shubuta fine sandy loam, 2 to 5 percent slopes, eroded	3,220	.7	Wahee fine sandy loam	1,414	.3
Shubuta fine sandy loam, 5 to 8 percent slopes	2,721	.6	West Point clay	1,864	.4
Shubuta fine sandy loam, 5 to 8 percent slopes, eroded	7,214	1.6	Total	446,080	100.0

1/ Less than 0.1 percent.

yellowish-brown heavy sandy clay loam to clay. The major horizons are—

0 to 6 inches, dark grayish-brown, friable fine sandy loam.
6 to 19 inches, mottled brownish-yellow, yellowish-brown, and brownish-gray, firm sandy clay.
19 to 26 inches, mottled brownish-yellow and gray sandy clay.
26 to 54 inches, gray, firm clay with many yellowish-brown and red mottles.

Cultivated areas have a grayish-brown to brown fine sandy loam plow layer. The surface layer ranges from 3 to 6 inches in thickness. Brownish-yellow to yellow clayey material of the subsoil is at the surface in places.

A few shallow gullies occur. The upper subsoil ranges from heavy sandy clay loam to clay in texture and from yellow to yellowish brown in color. The lower subsoil is clay loam to clay.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. Runoff is rapid. Because the slowly permeable subsoil restricts the penetration of roots, the moisture available to plants is limited. The surface soil is easy to till, but erosion is a hazard in cultivated fields. About 6 percent of this map ping unit is on slopes of 8 to 12 percent. Included in some places are small areas of Boswell, Shubuta, and Ora soils.

This soil is fairly well suited to cultivated crops if management is good. It is well suited to permanent pasture and to pine trees. (Capability unit IVe–4; woodland suitability group 2.)

Angie fine sandy loam, 0 to 2 percent slopes (AnA).—This soil has slower runoff than Angie fine sandy loam, 5 to 8 percent slopes, eroded, and a thicker surface layer. The surface layer is 6 to 12 inches thick. Included in the mapped areas of this soil are small areas of Boswell, Shubuta, Ora, and Savannah soils.

This soil is well suited to row crops, permanent pasture, and pine trees. (Capability unit IIs 2; woodland suitability group 2.)

Angie fine sandy loam, 2 to 5 percent slopes (AnB).—The surface layer of this soil is dark grayish-brown fine sandy loam that is generally 6 to 8 inches thick, though the range in thickness is 4 to 10 inches. A few rills occur in places. Included in mapping this soil are small areas of Boswell, Shubuta, Ora, and Savannah soils.

This soil is fairly well suited to cultivation, but erosion is a hazard in cultivated fields. The soil is well suited to permanent pasture and pine trees. (Capability unit IIIe–4; woodland suitability group 2.)

Bibb Series

The Bibb series consists of poorly drained, nearly level soils on the bottom lands of the Coastal Plain. These soils developed in material that washed from the uplands of the Coastal Plain. They have a surface layer of light-gray to very dark gray sandy loam to loam that is underlain by mottled gray to yellowish-brown sandy loam to sandy clay loam.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. Their available water capacity is moderate.

Bibb soils occur with the Chastain, Mantachie, and Iuka soils. They have a coarser textured subsoil than the Chastain soils and are not so well drained as the Mantachie and Iuka soils.

The Bibb soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of gallberry, low shrubs, vines, sedges, and grasses. Most of the acreage is wooded. Frequent flooding makes cultivation risky, but the soils are well suited to pasture.

Bibb soils (0 to 2 percent slopes) (Bb).—These poorly drained soils are on bottom lands along narrow drainageways and draws. The major horizons are—

0 to 3 inches, dark-gray, very friable fine sandy loam.
3 to 8 inches, mottled gray and pale-brown, very friable fine sandy loam.
8 to 22 inches, gray, friable fine sandy clay loam mottled with strong brown.
22 to 36 inches, gray sandy clay loam mottled with brown and yellow.

The surface layer consists of alluvial material that washed from surrounding soils. It ranges from loamy sand to loam. The depth to mottles ranges from near the surface to 6 inches. Areas mapped as these soils may include small areas of Mantachie and Chastain soils.

Bibb soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. They are subject to flooding.

Most of the acreage of these soils is wooded. Good pasture could be grown in areas that are properly drained. (Capability unit IVw–1; woodland suitability group 4.)

Bibb and Chastain fine sandy loams (0 to 2 percent slopes) (Bc).—These soils were mapped together because in most places they occur in such an intricate pattern that it was not practical to map them separately. Most areas mapped contain both the Bibb and the Chastain soils, but the Bibb is generally dominant. Some areas, however, consist entirely of the Bibb soil, and others entirely of the Chastain.

The major horizons of the Bibb soil are—

0 to 5 inches, dark-gray, very friable fine sandy loam.
5 to 14 inches, light brownish-gray fine sandy loam mottled with yellowish brown.
14 to 40 inches, light brownish-gray heavy sandy loam mottled with yellowish brown.

The fine sandy loam surface layer ranges from very dark gray to dark gray. The subsoil is gray to light brownish-gray fine sandy loam to sandy clay loam. In a few small areas the surface layer is loam or very fine sandy loam.

The major horizons of the Chastain soil are—

0 to 4 inches, dark-gray, very friable fine sandy loam.
4 to 12 inches, light brownish-gray fine sandy loam with many yellowish-brown mottles.
12 to 40 inches, gray sandy clay with many brown and yellow mottles.

The fine sandy loam surface layer ranges from very dark gray to gray. The subsoil is clay loam, sandy clay, or clay. In a few small areas the surface layer is loam to silt loam.

Bibb and Chastain fine sandy loams are strongly acid, contain a small amount of organic matter, and are low in natural fertility. Water stands in many areas much of the time, especially in winter (fig. 2). Areas mapped as these soils may include small areas of Iuka and Mantachie soils.

Most of the acreage is in woods. (Capability unit IVw–1; woodland suitability group 4.)

Boswell Series

The Boswell series consists of gently sloping to strongly sloping, moderately well drained soils of the Coastal Plain uplands. In uneroded areas, these soils have a surface layer of dark grayish-brown to brown fine sandy loam. The upper subsoil is yellowish-red to red, firm clay, and the lower subsoil is mottled red and gray, firm, plastic clay.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

749–450—65——2

Figure 2.—**Inadequately drained Bibb soils.**

Boswell soils occur with the Shubuta, Ruston, and Ora soils and are finer textured in the subsoil than those soils. Boswell soils are not so well drained as the Ruston soils and do not have a fragipan as do the Ora soils.

Boswell soils are widely distributed through the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of blueberry, dogwood, hawthorn, shrubs, and grasses. Most of the acreage is wooded, but the more gentle slopes are cultivated or pastured. Because dense, plastic clay is near the surface, the suitability of these soils for cultivation is limited.

Boswell fine sandy loam, 2 to 5 percent slopes, eroded (BfB2).—This moderately well drained soil of the uplands has a red, plastic clay subsoil. The major horizons are—

0 to 4 inches, brown, very friable fine sandy loam.
4 to 16 inches, dark-red, plastic clay.
16 to 25 inches, dark-red, plastic clay with many yellowish-brown mottles.
25 to 38 inches, mottled dark-red and light olive-gray, firm, massive clay.

Cultivated areas have a surface layer of light brownish-gray to reddish-brown fine sandy loam that is 4 to 6 inches thick in most places. In a few areas the redder subsoil is exposed at the surface. Shallow gullies are common. The upper subsoil ranges from yellowish red to dark red, and the lower subsoil is mottled red and gray. The depth to mottles ranges from 14 to 27 inches. Some mapped areas of this soil include small areas of Shubuta, Cuthbert, and Ora soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The surface layer generally has good tilth, but the subsoil is slowly permeable and, when wet, is very sticky. Because the subsoil restricts the depth that roots can penetrate, the moisture available to plants is limited.

This soil is fairly well suited to cultivated crops and is well suited to permanent pasture and pine trees. Erosion is a moderate hazard in cultivated areas. (Capability unit IIIe 4; woodland suitability group 2.)

Boswell fine sandy loam, 2 to 5 percent slopes (BfB).—The fine sandy loam surface layer of this soil ranges from dark grayish brown to grayish brown. It is generally 6 to 8 inches thick but, in some places, is as much as 10 inches thick. Some areas mapped as this soil include a few small areas of Boswell soil with slopes of 0 to 2 percent and small areas of Shubuta, Cuthbert, and Ora soils.

This soil is fairly well suited to cultivation and is well suited to permanent pasture and pine trees. (Capability unit IIIe–4; woodland suitability group 2.)

Boswell fine sandy loam, 5 to 8 percent slopes (BfC).—Because this soil has steeper slopes than Boswell fine sandy loam, 2 to 5 percent slopes, eroded, it is more susceptible to erosion. The surface layer is 6 to 10 inches thick. Some areas mapped as this soil include small areas of Shubuta, Cuthbert, and Ora soils.

This soil is well suited to grasses and trees and is fairly well suited to row crops. In cultivated areas careful management is needed to control erosion. (Capability unit IVe–4; woodland suitability group 2.)

Boswell fine sandy loam, 5 to 8 percent slopes, eroded (BfC2).—In most places the surface layer of this soil is brown fine sandy loam 3 to 5 inches thick. In other areas the dark-red clay subsoil is exposed at the surface, or the surface layer is a reddish-brown mixture of brown fine sandy loam and the upper part of the dark-red subsoil. Mottles occur at a depth of 14 to 20 inches. In some areas shallow gullies are common. Some areas mapped as this soil include small areas of Shubuta, Cuthbert, and Ora soils.

This soil is best suited to pasture and trees. In cultivated areas careful management is needed to control erosion. (Capability unit IVe–4; woodland suitability group 2.)

Boswell fine sandy loam, 8 to 12 percent slopes (BfD).—The steeper slopes and greater runoff distinguish this soil from Boswell fine sandy loam, 2 to 5 percent slopes, eroded. In cleared areas the erosion hazard is severe. Some areas mapped as this soil include small areas of Shubuta and Cuthbert soils.

Most of this soil is wooded. The soil is best suited to pasture and trees. (Capability unit VIe–3; woodland suitability group 2.)

Boswell fine sandy loam, 8 to 12 percent slopes, eroded (BfD2).—In most places the brown fine sandy loam surface layer of this soil is 3 to 5 inches thick, but in some areas the dark-red clay subsoil is exposed. Shallow gullies are common in some areas. Included in some areas mapped as this soil are small areas of Shubuta and Cuthbert soils.

This soil is best suited to pasture and trees and is mainly used for them. (Capability unit VIe–3; woodland suitability group 2.)

Boswell sandy clay loam, 5 to 8 percent slopes, severely eroded (BoC3).—In most places the surface layer of this soil is reddish sandy clay loam, but in some places the dark-red subsoil is exposed. Shallow gullies are common, and a few gullies are deep. Some areas mapped as this soil include small areas of Shubuta, Cuthbert, and Ora soils.

Much of this soil was cultivated at one time. The soil is now in woods or in pasture and is best suited for those uses. (Capability unit VIe–3; woodland suitability group 2.)

Boswell sandy clay loam, 8 to 12 percent slopes, severely eroded (BoD3).—The surface layer of this soil is reddish sandy clay loam, but in some areas the dark-red clay subsoil is exposed among remnants of the original

surface layer. Shallow gullies are common, and a few gullies are deep. Included in some areas mapped as this soil are small areas of Shubuta and Cuthbert soils.

Most of this soil was cultivated at one time but is now in pine trees, for which it is best suited. (Capability unit VIe–3; woodland suitability group 2.)

Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes (BtF).—These soils of the Coastal Plain were mapped as one unit because they occur in such an intricate pattern that it was not practical to map them separately.

In most mapped areas, especially those on the steep slopes, the Boswell soil is dominant. The Shubuta and Cuthbert soils generally occur with the Boswell soil, but some mapped areas consist entirely of the Boswell soil, some entirely of the Shubuta soil, and some entirely of the Cuthbert soil.

The major horizons of the Boswell soil are—

0 to 9 inches, dark grayish-brown to pale-brown, friable fine sandy loam.
9 to 26 inches, yellowish-red clay mottled with light gray.
26 to 48 inches, mottled red and gray, plastic clay.

The surface layer ranges from 4 to 12 inches in thickness and, in most places, is a fine sandy loam. The subsoil is yellowish-red to red clay that is mottled at a depth of about 16 inches.

The major horizons of the Shubuta soil are—

0 to 11 inches, dark-gray to brown, friable fine sandy loam.
11 to 28 inches, yellowish-red, friable clay loam.
28 to 52 inches, yellowish-red sandy clay loam mottled with light gray to pale brown.

The surface layer ranges from 4 to 12 inches in thickness and, in most places, is fine sandy loam. The upper subsoil is strong-brown to red heavy clay loam to clay, and the lower subsoil is yellowish-red to red sandy clay loam that is mottled with gray or brown.

The major horizons of the Cuthbert soil are—

0 to 8 inches, very dark gray to brown fine sandy loam.
8 to 17 inches, yellowish-red, friable clay loam.
17 to 24 inches, mottled yellowish-red, reddish-yellow, and light-gray clay loam.
24 to 36 inches, mottled red, gray, and yellow sandy loam in stratified layers.

The surface layer ranges from 4 to 12 inches in thickness. The upper surface layer is 2 or 3 inches thick and ranges from very dark gray to gray. The lower part of the surface layer ranges from grayish brown to brown. The subsoil is yellowish-red to red heavy clay loam to clay and is underlain by layers of mottled red, gray, and yellow sandy loam.

Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes, are strongly acid, contain a small amount of organic matter, and are low in natural fertility. They are moderately well drained and are moderate to high in available water capacity. Some areas mapped as these soils include small areas of Ruston and Orangeburg soils.

All the acreage in these soils is densely wooded. (Capability unit VIIe–2; woodland suitability group 2.)

Boswell, Shubuta, and Cuthbert fine sandy loams, 5 to 12 percent slopes (BtD).—These soils are not so steep as Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes, and have less rapid runoff. In most places the surface layer is 8 to 11 inches thick. Included in areas mapped as these soils are small areas of Ruston and Orangeburg soils and small areas that have a surface layer 4 to 6 inches thick.

Practically all of this mapping unit is wooded. (Capability unit VIe–4; woodland suitability group 2.)

Bruno Series

The Bruno series consists of somewhat excessively drained, nearly level alluvial soils of the Coastal Plain. These soils have a surface layer and a subsoil of loamy fine sand or sand. The surface layer is gray to grayish brown, and the subsoil is brown to yellowish brown.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. Their available water capacity is low.

Bruno soils lie next to or near the Iuka and Mantachie soils but are coarser textured and more excessively drained than those soils.

Bruno soils are distributed along the flood plains of the Chickasawhay River and Bucatunna Creek. The native vegetation consists of hardwoods and mixed pines with an understory of huckleberry, dogwood, shrubs, vines, and grasses. These soils are fairly well suited to most crops grown in the county.

Bruno loamy fine sand (0 to 2 percent slopes) (Bu).—This somewhat excessively drained alluvial soil is on bottom lands. The major horizons are—

0 to 8 inches, very dark grayish-brown, very friable loamy fine sand.
8 to 26 inches, brown to dark brown, very friable loamy fine sand.
26 to 40 inches, light yellowish-brown, very friable loamy fine sand.

The surface layer ranges from 6 to 12 inches in thickness and from brown to yellowish brown in color. In many places the alluvial material is in layers and consists of material that was laid down more recently than that in most areas of this soil.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. Plant nutrients leach out very rapidly because the soil is coarse textured and somewhat excessively drained.

Included in areas mapped as this soil are small areas of Iuka and Mantachie soils and small areas of Bruno soil that have a fine sand surface layer.

This soil is fairly well suited to pasture and row crops. (Capability unit IIIw–2; woodland suitability group 11.)

Cahaba Series

The Cahaba series consists of nearly level to strongly sloping, well-drained soils on terraces of the Coastal Plain. In uneroded areas, the surface layer is a dark-gray to brown fine sandy loam. The upper subsoil is a yellowish-red to red, friable heavy sandy loam to clay loam, and the lower subsoil is a yellowish-red to red, friable fine sandy loam to loamy sand.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. They are moderate in available water capacity.

Cahaba soils occur with the Tilden, Prentiss, and Flint soils but do not have a fragipan as do the Tilden and

Prentiss soils. Cahaba soils are coarser textured in the subsoil than the Flint soils.

The Cahaba soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of dogwood, huckleberry, hawthorn, low shrubs, vines, and grasses. Most of the acreage is in cultivated crops or permanent pasture.

Cahaba fine sandy loam, 0 to 2 percent slopes (CaA).—This well-drained soil on terraces has a subsoil of friable, yellowish red to red loamy sand to clay loam. The major horizons are—

0 to 7 inches, brown to dark-brown, very friable fine sandy loam.
7 to 34 inches, yellowish-red to red, friable sandy clay loam.
34 to 50 inches, reddish yellow to yellowish red, friable fine sandy loam to loamy sand.

Cultivated areas have a plow layer of grayish-brown to brown fine sandy loam. The surface layer is 6 to 10 inches thick. The upper subsoil ranges from heavy sandy loam to clay loam in texture, and from yellowish red to red in color. The lower subsoil is sandy loam to loamy sand. Included in some areas mapped as this soil are small areas of Tilden, Prentiss, and Flint soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The surface layer generally is in good tilth. No dense layer restricts the growth of roots or the movement of water. The available water capacity is moderate.

This soil responds well to fertilization. Practically all of the acreage is in cultivated crops or permanent pasture. If the soil is well managed, erosion is not a hazard. (Capability unit I–1; woodland suitability group 1.)

Cahaba fine sandy loam, 2 to 5 percent slopes (CaB).—This soil has a grayish-brown surface layer that is generally 5 or 6 inches thick but is as much as 10 inches thick in some places. Included in some areas mapped as this soil are small areas of Tilden, Prentiss, and Flint soils.

Much of this soil is in cultivated crops or permanent pasture. The soil is suited to many kinds of crops. If general management is good, only a few special practices are needed. (Capability unit IIe–1; woodland suitability group 1.)

Cahaba fine sandy loam, 2 to 5 percent slopes, eroded (CaB2).—In most places this soil has a surface layer of dark-brown to yellowish-red fine sandy loam 3 to 5 inches thick. In some places the red sandy clay loam subsoil is exposed, and there are a few shallow gullies. Some areas mapped as this soil include small areas of Tilden, Prentiss, and Flint soils.

Practically all of this soil has been cultivated at one time. Much of it is still used for cultivated crops or is in pasture. The soil is suited to many kinds of crops if it is carefully managed to control erosion. (Capability unit IIe–1; woodland suitability group 1.)

Cahaba fine sandy loam, 5 to 12 percent slopes, eroded (CaD2).—In most places the surface layer of this soil is 4 to 6 inches thick, but in some small areas it is 8 to 10 inches thick. In severely eroded included areas the yellowish-red subsoil is exposed. Shallow gullies are common. About one-third of this soil is on slopes of 8 to 12 percent and is more susceptible to erosion than the soil in less sloping areas. Included in some areas mapped as this soil are small areas of Tilden, Prentiss, and Flint soils.

Because erosion is a severe hazard, especially in cultivated fields, this soil is best suited to pasture and pine trees. (Capability unit IVe–1; woodland suitability group 1.)

Chastain Series

The Chastain series consists of poorly drained, nearly level soils on the bottom lands of the Coastal Plain. These soils developed in material that washed from the uplands. They have a very dark gray to light-gray sandy loam to silt loam surface layer that is underlain by mottled gray and yellow sandy clay loam to clay.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate to high.

Chastain soils occur with the Bibb and Mantachie soils. They have a finer textured subsoil than the Bibb and Mantachie soils and are not so well drained as the Mantachie.

Chastain soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of gallberry, shrubs, vines, rushes, sedges, and grasses. Most of the acreage is wooded.

In this county Chastain soils are not mapped separately. They are mapped only with Bibb soils in an undifferentiated unit, the description of which contains a profile of Chastain fine sandy loam.

Cuthbert Series

The Cuthbert series consists of moderately sloping to very steep, moderately well drained soils of the Coastal Plain uplands. In uneroded areas the surface layer is dark gray to dark grayish-brown fine sandy loam. The upper subsoil consists of mottled red, gray, and yellow sandy loam in horizontal beds.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Cuthbert soils occur with the Boswell and Shubuta soils and are coarser textured than the Boswell soils. The beds of sandy loam that occur in the Cuthbert soils are not present in the Boswell and Shubuta soils.

Cuthbert soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of blueberry, hawthorn, shrubs, grasses, and vines. Most areas of these soils are wooded.

In this county Cuthbert soils are mapped only in undifferentiated units of Boswell, Shubuta, and Cuthbert soils. A profile of a Cuthbert soil is in the description of Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes.

Eustis Series

The Eustis series consists of nearly level to very steep, well-drained or somewhat excessively drained soils of the Coastal Plain. The surface layer is very dark grayish-brown to dark-brown loamy sand. The upper subsoil is strong-brown to yellowish red loamy sand, and the lower subsoil is yellowish-red to reddish-yellow loamy sand or sand.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is low to very low.

Eustis soils occur with Ruston and Orangeburg soils but throughout the profile are coarser textured than those soils.

The Eustis soils are widely distributed in this county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of dogwood, blueberry, low shrubs, and grasses. Most of the acreage is wooded, but some gently sloping areas are in pasture or cultivated crops.

Eustis loamy sand, terrace (0 to 5 percent slopes) (Et).—This soil is well drained or somewhat excessively drained. It has a surface layer of very friable, very dark grayish-brown to dark yellowish-brown loamy sand and a subsoil of dark-brown to yellowish red loamy sand to sand. The major horizons are—

0 to 10 inches, very dark grayish-brown to dark yellowish-brown loamy sand.
10 to 20 inches, dark-brown, loose loamy sand.
20 to 45 inches, yellowish-red, loose loamy sand.
45 to 60 inches, yellowish-brown, loose fine sand.

The loamy sand surface layer ranges from very dark grayish brown to yellowish brown and is 8 to 12 inches thick. The subsoil is dark brown to yellowish-red loamy fine sand to sand. Some areas mapped as this soil include small areas of Eustis soil with a sand surface layer and small areas of Cahaba, Tilden, and Prentiss soils.

This soil is on fairly broad terraces above the flood plains of large streams. Because the water is nearer the surface in these terraces than in upland areas, more moisture is available to plants.

Much of this soil is in pasture. The soil is suited to pasture, row crops, and trees. (Capability unit IIIs–1; woodland suitability group 7.)

Eustis loamy sand, 8 to 12 percent slopes (EsD).—This strongly sloping, somewhat excessively drained soil of the uplands has a subsoil of very friable, brown to yellowish-red loamy sand to sand. The major horizons are—

0 to 9 inches, dark-brown, very friable loamy sand.
9 to 16 inches, brown, very friable, loose loamy sand.
16 to 42 inches, yellowish-red, loose fine sand.
42 to 55 inches, reddish-yellow, loose fine sand.

The surface layer ranges from very dark grayish brown to dark brown and is 6 to 12 inches thick. The upper subsoil is strong-brown to yellowish red loamy sand, and the lower subsoil is yellowish-red to reddish-yellow loamy sand to sand. Areas mapped as this soil include a few small areas that have a brownish-yellow subsoil and small areas of Orangeburg and Ruston soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is low or very low.

The surface layer is easy to till. No dense layer restricts the growth of roots or the movement of water. The soil is best suited to pasture or trees and is mainly used for them. (Capability unit VIs–1; woodland suitability group 7.)

Eustis loamy sand, 2 to 5 percent slopes (EsB).—This gently sloping soil has slower runoff than Eustis loamy sand, 8 to 12 percent slopes. More moisture, therefore, is available to plants. Included in some areas mapped as this soil are a few small areas that have a brownish-yellow subsoil and small areas of Orangeburg and Ruston soils.

Much of this soil is in pasture. The soil is suited to pasture, row crops, and trees. (Capability unit IIIs–1; woodland suitability group 7.)

Eustis loamy sand, 5 to 8 percent slopes (EsC).—This soil is in hilly areas between the smoother, lower terraces and the higher upland divides. Water moves into and through this soil rapidly. In some small areas the subsoil is brownish yellow, and in others it is sandy loam or loam.

Much of this soil is used for pasture. (Capability unit IVs–1; woodland suitability group 7.)

Eustis loamy sand, 12 to 35 percent slopes (EsF).—This soil is on steep side slopes. It is between soils on the smoother, higher divides and soils on lower slopes that extend into streams and other drainageways. In some small areas the subsoil is brownish yellow, and in others it is sandy loam or loam.

Because it is steep, this soil is poorly suited to most cultivated crops and to pasture. It is best suited to trees and is mostly used for them. (Capability unit VIIs–1; woodland suitability group 7.)

Eutaw Series

The Eutaw series consists of poorly drained, nearly level soils on prairie uplands. The surface layer is very dark gray to very dark grayish-brown clay. The upper subsoil is mottled grayish-brown to pale-olive clay, and the lower subsoil is mottled gray, yellow, and red, firm, plastic clay. Heavy plastic clay occurs at a depth of about 6 feet.

These soils are strongly acid or medium acid. They contain a small amount of organic matter and are low to moderate in natural fertility. The available water capacity is high.

Eutaw soils occur with Vaiden, Sumter, and Houston soils, but are not so well drained as the Vaiden soils and are not so yellow in the upper subsoil. They are more strongly acid than the neutral or mildly alkaline Houston and Sumter soils.

Eutaw soils are widely distributed throughout the prairie section of the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of hawthorn, dogwood, shrubs, grasses, and vines. Most of the acreage is in trees, for which these soils are best suited.

Eutaw clay, deep (0 to 2 percent slopes) (Eu).—This poorly drained, medium acid soil of the prairie has a surface layer and subsoil of clay. The major horizons are—

0 to 6 inches, very dark grayish-brown, friable clay.
6 to 11 inches, grayish-brown clay with few, fine, faint, dark-brown mottles.
11 to 38 inches, gray clay with many, medium, distinct, yellowish-brown and red mottles.

The clay surface layer ranges from very dark gray to dark grayish brown in color and from 6 to 10 inches in thickness. The depth to which roots can penetrate is limited by the slowly permeable, clayey subsoil that is very sticky and plastic. Some areas mapped as this soil include small areas of Vaiden and Sumter soils.

This soil is strongly acid to medium acid, contains a small amount of organic matter, and is low to moderate in natural fertility. The available water capacity is high.

Most of this soil is wooded. (Capability unit IVw–3; woodland suitability group 12.)

Eutaw-Vaiden clays, deep (0 to 3 percent slopes) (Ev).—The soils in this complex were mapped together because they occur in such an intricate pattern that it was not practical to map them separately. The Eutaw soil makes up about 55 percent of the complex and the Vaiden soil about 45 percent.

The major horizons of the Eutaw soil are—

0 to 3 inches, dark grayish-brown, friable clay.
3 to 6 inches, olive-gray clay with few, fine, faint, olive-yellow mottles.
6 to 31 inches, gray clay with few to many, fine, faint, olive-yellow mottles.

The surface layer ranges from very dark gray to grayish brown. The subsoil is olive gray to pale olive mottled with yellow to red. The depth to the mottles ranges from near the surface to 6 inches.

The major horizons of the Vaiden soil are—

0 to 3 inches, dark-gray, friable clay.
3 to 5 inches, light-gray to yellowish-brown, friable clay.
5 to 14 inches, olive-yellow clay with many, fine, distinct, gray and yellowish-brown mottles.
14 to 38 inches, gray clay with yellow to red mottles.

The surface layer ranges from 3 to 6 inches in thickness and from dark gray to dark grayish-brown in color. The subsoil is pale olive to light yellowish brown.

Eutaw and Vaiden soils are strongly acid to medium acid in the surface layer and subsoil. They contain a small amount of organic matter and are low in natural fertility. The available water capacity is high. Alkaline, plastic heavy clay occurs at a depth of 5 to 7 feet. Included in some places are small areas of Sumter and Houston soils.

Most of the acreage of Eutaw-Vaiden clays, deep, is densely wooded. (Capability unit IVw–3; woodland suitability group 12.)

Flint Series

The Flint series consists of nearly level to gently sloping, moderately well drained soils on terraces of the Coastal Plain. In uneroded areas the surface layer is light-gray to very dark grayish-brown fine sandy loam. The upper subsoil is strong-brown to red, friable heavy loam to clay, and the lower subsoil is yellowish-red to red sandy loam to clay loam.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Flint soils occur with the Prentiss, Tilden, and Wahee soils. They do not contain a fragipan as do the Prentiss and Tilden soils. Flint soils are better drained than Wahee soils and have a subsoil that is red rather than yellow.

Flint soils are distributed throughout the county, mainly in small areas. The native vegetation consists of pines and hardwoods in mixed stands and an understory of blueberry, dogwood, hawthorn, shrubs, grasses, and vines. Most of the acreage has been cleared and is in cultivated crops or permanent pasture.

Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes (FfB).—This gently sloping, moderately well drained soil occurs on terraces of the Coastal Plain. It has a subsoil of friable, strong-brown to red heavy loam to clay loam. The major horizons are—

0 to 10 inches, very dark grayish-brown to pale-brown, friable fine sandy loam.
10 to 23 inches, strong-brown to yellowish-red, friable loam to clay loam.
23 to 36 inches, yellowish-red heavy clay loam with many light-gray and red mottles.
36 to 45 inches, yellowish-red, friable sandy loam with many light-gray and yellow mottles.

The plow layer in cultivated fields is grayish-brown to light yellowish-brown fine sandy loam. In most places the surface layer is 6 to 12 inches thick, but in a few areas it is 4 to 6 inches thick. The upper subsoil is strong-brown to red heavy loam to clay, and the lower subsoil is yellowish-red to red sandy loam to clay loam. Some areas mapped as this soil include small areas of Wahee, Prentiss, and Tilden soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is moderate. No dense layers restrict the growth of roots and the movement of water.

This soil is well suited to permanent pasture, row crops, and pine trees. It is easy to till, but cultivated areas are susceptible to erosion. (Capability unit IIe–2; woodland suitability group 2.)

Flint fine sandy loam, loamy substratum, 0 to 2 percent slopes (FfA).—This nearly level soil has slower runoff and is less likely to erode than Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes, but is otherwise similar to that soil. In some places removing water from the surface is a problem, and graded rows and W-ditches are needed. Included in some areas mapped as this soil are small areas of Prentiss and Tilden soils, which have a fragipan, and a few small areas of somewhat poorly drained Wahee soils.

Much of this soil is in crops and permanent pasture. (Capability unit IIs–1; woodland suitability group 2.)

Gullied Land

In this land is an intricate pattern formed by gullies that have destroyed the soil profile except in small areas between the gullies.

Gullied land, acid (Ga).—Soil materials of this land type are acid and range from sands to clays. Infiltration and permeability are variable. The rate of runoff is high.

Most of this acreage is idle or is reverting to trees. Some areas have a good stand of pine trees, and other areas have a dense growth of briers, vines, and scrubby hardwoods. This land type is suited to pine trees. (Capability unit VIIe–3; woodland suitability group 17.)

Gullied land, alkaline (Gk).—The soil materials of this land type are alkaline and, in most places, consist of clay or chalk. Infiltration and permeability are very slow, and runoff is rapid.

Much of this acreage is idle. Under intensive management, this land type has limited use for pasture. (Capability unit VIIe–3; woodland suitability group 14.)

Houlka Series

The Houlka series consists of somewhat poorly drained soils that formed on the prairie in alluvium that washed from uplands. These soils have a very dark gray to dark

grayish-brown clay surface layer and a very dark grayish-brown to olive-gray subsoil.

These soils are slightly acid, contain a moderate amount of organic matter, and are moderate in natural fertility. The available water capacity is high.

Houlka soils occur with the West Point soils but are not so well drained. They are slightly acid, but the West Point soils are neutral to moderately alkaline.

Houlka soils are widely distributed throughout the prairie of the county and are mostly in permanent pasture and trees. The native vegetation consists of mixed hardwoods and an understory of shrubs, grasses, rushes, sedges, and vines.

Houlka clay (0 to 2 percent slopes) (Ho.)—This somewhat poorly drained soil is on prairie bottom lands. The major horizons are—

0 to 5 inches, very dark gray, friable clay.
5 to 10 inches, dark-brown to brown, firm clay.
10 to 38 inches, mottled gray, light brownish-gray, and strong-brown clay; firm.

The surface layer ranges from 4 to 12 inches in thickness. The subsoil is mottled gray to brown clay. Areas mapped as this soil include small areas of West Point soils.

Infiltration and permeability are slow or very slow. The firm subsoil of plastic clay limits the depth that roots can penetrate.

This soil is suited to permanent pasture and trees. (Capability unit IIIw–3; woodland suitability group 13.)

Houston Series

The Houston series consists of moderately well drained, nearly level to gently sloping soils on prairie uplands. These soils developed from marl or strongly calcareous clays. The surface layer is very dark gray to black clay. The upper subsoil is very dark gray to olive clay, and the lower subsoil is mottled dark-gray, olive-gray, and olive-yellow, firm clay.

The surface layer is neutral to mildly alkaline, and the subsoil is mildly alkaline and calcareous. These soils contain a small amount of organic matter and are moderate in natural fertility. The available water capacity is high.

Houston soils occur with Sumter and Vaiden soils. They are better drained than the Vaiden soils and are neutral to mildly alkaline instead of strongly acid. Houston soils are deeper to chalk than Sumter soils.

These soils are widely distributed throughout the prairie section of the county. The native vegetation is grasses, and most of the acreage is in permanent pasture.

Houston clay, 0 to 2 percent slopes (HuA).—This soil is moderately well drained and neutral to alkaline. It has a clay surface layer and subsoil. The major horizons are—

0 to 14 inches, black, firm clay.
14 to 26 inches, very dark gray, firm clay with few, fine, distinct, olive-brown mottles.
26 to 38 inches, mottled olive, dark-gray, and light olive-brown, firm clay.

The surface layer ranges from 6 to 14 inches in thickness and from very dark gray to black in color. Included in some areas mapped as this soil are small areas of Vaiden and Sumter soils.

This soil has a neutral to mildly alkaline surface layer and a mildly alkaline to calcareous subsoil. It is moderate in natural fertility and contains a small amount of organic matter. The available water capacity is high. The soil is very sticky and plastic when wet. Because permeability is slow, runoff is also slow and surface water is a problem.

Most of this soil is in permanent pasture, for which it is well suited. (Capability unit IIs–3; woodland suitability group 16.)

Houston clay, 2 to 5 percent slopes (HuB).—This soil has a very dark gray to black surface layer 6 to 8 inches thick. The subsoil is dark grayish brown to dark olive gray with a few mottles of olive and brown. In places there are a few shallow gullies. Some areas mapped as this soil include a few small areas with slopes of 5 to 8 percent and small areas of Vaiden and Sumter soils.

Most of this soil is in permanent pasture. (Capability unit IIe–4; woodland suitability group 16.)

Iuka Series

The Iuka series consists of moderately well drained, nearly level soils that formed on bottom lands in material washed from Coastal Plain uplands. These soils have a surface layer of dark grayish-brown to dark-brown, friable fine sandy loam to loam and a subsoil of brown to yellowish-brown, friable sandy loam to light sandy clay loam.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Iuka soils occur with Bibb and Mantachie soils and are better drained than those soils.

Iuka soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of blueberry, gallberry, shrubs, and vines. Most of this acreage is wooded, but small areas are in pasture and crops.

Iuka fine sandy loam (0 to 2 percent slopes) (Ik).—This moderately well drained, acid soil is on bottom lands of the Coastal Plain. The major horizons are—

0 to 5 inches, dark grayish-brown, very friable fine sandy loam.
5 to 23 inches, brown, very friable fine sandy loam to loam.
23 to 40 inches, mottled brown, light brownish-gray, and yellowish-brown fine sandy loam.

The surface layer ranges from 6 to 12 inches in thickness and from dark grayish brown to dark brown in color. The subsoil ranges from fine sandy loam to loam. Included in mapping are small areas of loam and small areas of Bibb and Mantachie soils. Some small areas are well drained.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is moderate. No dense layer restricts the growth of roots or the movement of water.

This soil is well suited to trees. Areas that have good surface drainage are well suited to row crops and to pasture. Crops respond well to additions of fertilizer. (Capability unit IIw–1; woodland suitability group 6.)

Iuka soils, local alluvium (0 to 2 percent slopes) (Iu).—These moderately well drained soils formed in local al-

luvium, in most places, in narrow strips along the smaller streams. The major horizons are—

0 to 18 inches, brown, friable fine sandy loam to loam.
18 to 24 inches, yellowish brown fine sandy loam with few, fine, faint, brownish-gray mottles.
24 to 40 inches, mottled yellowish-brown and light-gray fine sandy loam.

The surface layer ranges from loamy sand to loam and is 6 to 20 inches thick. Areas mapped as these soils include small areas of Mantachie soils, local alluvium.

Iuka soils, local alluvium, are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

These soils are mostly in row crops and pasture and are well suited to them where surface drainage is good. The soils are also well suited to trees. (Capability unit IIw–1; woodland suitability group 6.)

Johnston Series

The Johnston series consists of poorly drained, nearly level soils on bottom lands of the Coastal Plain. These soils are generally at the base of slopes or in narrow draws. They formed in material washed from the Coastal Plain uplands. The surface layer is very dark gray to black, very friable sandy loam to loam, and the subsoil is dark-gray to black fine sandy loam to sandy clay loam.

These soils are extremely acid, contain a large amount of organic matter, and are low in natural fertility. The available water capacity is high.

Johnston soils occur with Bibb, Chastain, and Mantachie soils and have a much darker subsoil than those soils and contain more organic matter. They are not so well drained as the Mantachie soils.

Johnston soils are widely distributed throughout the county. The native vegetation consists of mixed hardwoods and cypress with an understory of gallberry, sedges, rushes, grasses, shrubs, and vines. Most of the acreage is wooded, but drained areas could be used for row crops and pasture.

Johnston loam (0 to 2 percent slopes) (Jo.)—This poorly drained soil is on bottom lands. Its surface layer and subsoil contain a large amount of organic matter. The major horizons are—

0 to 4 inches, very dark gray, very friable loam.
4 to 26 inches, black, very friable loam.
26 to 42 inches, very dark gray to black fine sandy loam.

The surface layer ranges from very dark gray to black in color and from fine sandy loam to loam in texture. The subsoil ranges from black to dark gray and from sandy loam to sandy clay loam. Areas mapped as this soil include small areas of Bibb, Chastain, and Mantachie soils.

This soil is extremely acid. It contains a large amount of organic matter throughout the profile and is low in natural fertility. The available water capacity is high.

This soil is suited to trees, and it would be suited to row crops and pasture if it were properly drained. (Capability unit IVw 1; woodland suitability group 9.)

Lauderdale Series

The Lauderdale series consists of moderately sloping to very steep, well-drained to excessively drained soils of the Coastal Plain uplands. These soils formed in sandy material underlain by sandstone of the Tallahatta (Buhrstone) formation. Their surface layer is a very dark gray to dark-brown stony fine sandy loam, and their subsoil is a pale-brown sandy clay loam that contains much partly weathered sandstone.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is low.

Lauderdale soils are next to or near the Boswell, Ruston, and Shubuta soils and are coarser textured and less strongly developed than those soils. Underlying the Lauderdale soils are beds of sandstone, and underlying the Boswell, Ruston, and Shubuta soils is unconsolidated material.

Lauderdale soils are in the northern part of the county along the Lauderdale County line. The native vegetation consists of hardwoods and pines in mixed stands and an understory of dogwood, huckleberry, shrubs, grasses, and vines. Most of the acreage is wooded, and trees are the best use.

Lauderdale stony fine sandy loam, 12 to 45 percent slopes (LaF).—This well-drained to excessively drained soil is on uplands. Most of its acreage is on slopes of more than 17 percent. The major horizons are—

0 to 7 inches, very dark gray stony fine sandy loam.
7 to 12 inches, light brownish-gray sandy clay loam containing many partly weathered sandstone.
12 to 60 inches, horizontal beds of firmly cemented sandstone.

The surface layer ranges from very dark gray to dark grayish brown in color and from 6 to 10 inches in thickness. It contains many small to large fragments of sandstone. Some areas mapped as this soil include small areas of Boswell, Shubuta, and Eustis soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is low.

The small total acreage of this soil is wooded. (Capability unit VIIs–2; woodland suitability group 10.)

Lauderdale stony fine sandy loam, 5 to 8 percent slopes (LaC).—This soil is distinguished from Lauderdale stony fine sandy loam, 12 to 45 percent slopes, by its much more gentle slopes and its much slower runoff. Some areas mapped as this soil include small areas of Boswell, Shubuta, and Eustis soils.

The small total acreage of this soil is wooded. (Capability unit IVs–2; woodland suitability group 10.)

Lauderdale-Boswell complex, 17 to 45 percent slopes (LbF). -These steep Lauderdale and Boswell soils were mapped together in most places because they occur in such an intricate pattern that it was not practical to map them seperately. The Lauderdale soils have a surface layer of stony fine sandy loam that is underlain by horizontal layers of sandstone. They formed from material derived from the sandstone. Lauderdale soils are excessively drained. The Boswell soils have a fine sandy loam surface layer that is underlain by plastic clay. They formed in this clay and are moderately well drained.

In most areas mapped both Lauderdale and Boswell soils occur. Generally, about 60 percent of a mapped area consists of Lauderdale soils and about 40 percent of Boswell soils. In a few places small areas of the Shubuta and Eustis soils are included.

The major horizons of a Lauderdale soil are—

0 to 5 inches, dark-brown, very friable stony fine sandy loam.
5 to 18 inches, yellowish-brown stony sandy clay loam.
18 to 50 inches, horizontal beds of firmly cemented sandstone.

The surface layer ranges from 4 to 8 inches in thickness and from very dark gray to dark brown in color. It contains a few small fragments of sandstone and is underlain by horizontal beds of firmly cemented sandstone. A few shallow gullies occur.

The major horizons of a Boswell soil are—

0 to 6 inches, dark grayish-brown to yellowish-brown, friable fine sandy loam.
6 to 15 inches, yellowish-red, friable clay.
15 to 30 inches, red clay with many, fine, distinct, gray mottles.
30 to 45 inches, mottled red and gray clay.

The surface layer ranges from 3 to 8 inches in thickness and from dark grayish brown to yellowish brown in color. The lower subsoil is clay mottled with red and gray at a depth of 14 to 27 inches. A few gullies occur.

The Lauderdale and Boswell soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is variable.

All of the acreage in these soils is wooded. (Capability unit VIIs–3; woodland suitability group 10.)

Lauderdale-Boswell complex, 5 to 12 percent slopes (LbD).—The surface layer of the soils in this complex ranges from 3 to 5 inches in thickness. In many places the subsoil is red, plastic clay and is underlain by layers of sandstone. Gullies range from few to common in about half of the complex. Included in mapped areas are small areas of Ruston, Shubuta, and Eustis soils.

Most of this complex is wooded. (Capability unit VIs-2; woodland suitability group 10.)

Lauderdale-Eustis complex, 12 to 45 percent slopes (LeF).—The steep soils in this complex were mapped together because they are in such an intricate pattern that it was not practical to map them separately. The Lauderdale soils have a stony fine sandy loam surface layer that is underlain by horizontal layers of sandstone. They formed in sandy material. Eustis soils have a loamy sand surface layer and a loamy sand subsoil. They formed in loamy sand and sand.

Both the Lauderdale and the Eustis soils occur in most areas mapped. Generally, Lauderdale soils make up about 65 percent of an area mapped and Eustis soils about 35 percent. Included in some areas are small areas of Boswell, Shubuta, and Ruston soils.

The major horizons of a Lauderdale soil are—

0 to 8 inches, dark grayish-brown stony fine sandy loam.
8 to 12 inches, yellowish brown clay containing many fragments of sandstone.
12 to 60 inches, horizontal layers of firmly cemented sandstone.

The surface layer ranges from 4 to 8 inches in thickness and in some areas is loamy sand instead of stony fine sandy loam. A few shallow gullies occur.

The major horizons of a Eustis soil are—

0 to 6 inches, grayish-brown, loose loamy sand.
6 to 26 inches, light yellowish-brown to very pale-brown fine sand.
26 to 46 inches, very pale-brown fine sand.

The surface layer ranges from 6 to 12 inches in thickness. In a few small areas the surface layer is sand instead of loamy sand. The subsoil ranges from loamy sand to sand.

The soils in this complex are droughty and strongly acid. They are low in organic-matter content and in natural fertility.

All of the acreage in this complex is in woods. (Capability unit VIIs–3; woodland suitability group 10.)

Lauderdale-Eustis complex, 8 to 12 percent slopes (LeD).—The less steep slopes and the slower runoff of this complex distinguishes it from Lauderdale-Eustis complex, 12 to 45 percent slopes. Included in some mapped areas are small areas that have slopes of 5 to 8 percent and small areas of Boswell, Shubuta, and Ruston soils.

Most of the acreage in this complex is wooded. (Capability unit VIs–2; woodland suitability group 10.)

Leaf Series

The Leaf series consists of nearly level, poorly drained soils on terraces of the Coastal Plain. The surface layer is light-gray to very dark gray silt loam to fine sandy loam. The upper subsoil is gray clay loam to clay mottled with yellow and brown. The lower subsoil is mottled gray clay and is underlain by heavy clay.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate to high.

Leaf soils occur with the Mashulaville and Stough soils, which have a fragipan. Leaf soils have a finer textured subsoil than Mashulaville and Stough soils but do not have a fragipan. They are more poorly drained than Stough soils.

The Leaf soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of dogwood, huckleberry, hawthorn, shrubs, grasses, and vines. Most of the acreage is in trees, but some areas are in pasture.

Leaf fine sandy loam (0 to 2 percent slopes) (Lf).—This poorly drained soil on terraces has a subsoil of mottled plastic clay to clay loam. The major horizons are—

0 to 10 inches, light-gray to gray, friable fine sandy loam.
10 to 24 inches, mottled gray and strong-brown, firm, plastic clay.
24 to 40 inches, gray, firm, plastic clay mottled with strong brown.

The surface layer ranges from light gray to gray in color and from 6 to 10 inches in thickness. The upper subsoil is clay loam to clay, and the underlying material is clay. Included in areas mapped as this soil are small areas of Mashulaville and Stough soils and a few small areas of Leaf soil that have a silt loam surface layer.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is moderate to high.

Some areas are used for permanent pasture, but most of the acreage is in woods. (Capability unit IVw–2; woodland suitability group 5.)

Mantachie Series

The Mantachie series consists of somewhat poorly drained, nearly level soils on bottom lands of the Coastal Plain. These soils formed from materials washed from the Coastal Plain uplands. They have a surface layer of very dark grayish-brown to gray, friable fine sandy loam

and a subsoil of yellowish-brown to gray, friable sandy loam to sandy clay loam.

Mantachie soils are very strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Mantachie soils occur with the Bibb and Iuka soils. They are not so well drained as the Iuka soils but are better drained than the Bibb soils.

The Mantachie soils are widely distributed throughout the county. Their native vegetation consists of pines and hardwoods in mixed stands and an understory of gallberry, shrubs, grasses, and vines. Most of the acreage is in trees, but some small areas are in pasture and row crops.

Mantachie fine sandy loam (0 to 2 percent slopes) (Ma).—This somewhat poorly drained soil is on bottom lands. The major horizons are—

0 to 8 inches, brown, very friable fine sandy loam.
8 to 14 inches, yellowish-brown fine sandy loam mottled with pale brown.
14 to 30 inches, mottled yellow, gray, and brown fine sandy loam.
30 to 42 inches, gray sandy clay loam mottled with yellowish brown.

The surface layer ranges from 6 to 12 inches in thickness and from dark grayish brown to yellowish brown in color. Included in some areas mapped as this soil are small areas of Bibb and Iuka soils.

This soil is very strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is moderate. The surface layer generally has good tilth. No dense layer restricts the growth of roots.

This soil is well suited to pine and hardwood trees. Properly drained areas are well suited to pasture and row crops. This soil can be drained by ditches (fig. 3). The response to fertilizer is good. (Capability unit IIw–3; woodland suitability group 6.)

Mantachie soils, local alluvium (0 to 2 percent slopes) (Mc).—These somewhat poorly drained soils formed on bottom lands, mainly narrow ones along smaller streams. Their surface layer is local alluvium that washed from soils nearby. The major horizons are—

0 to 5 inches, pale-brown, very friable fine sandy loam.
5 to 11 inches, brown, friable loam.
11 to 26 inches, light-gray fine sandy loam mottled with yellowish brown.
26 to 40 inches, mottled gray, pale-brown, and yellowish-brown sandy clay loam.

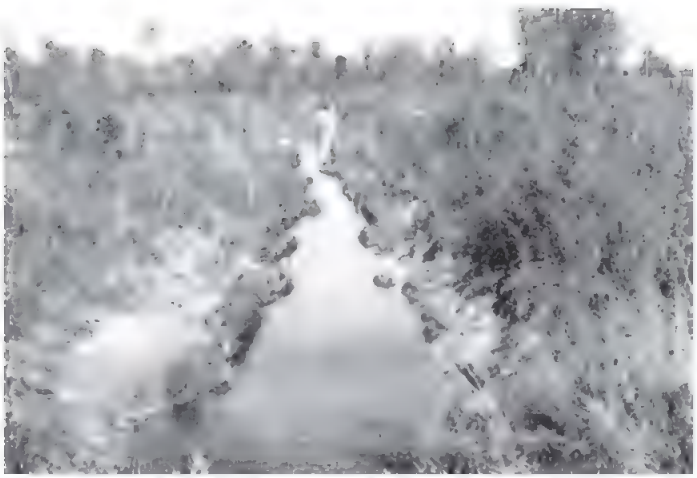

Figure 3.—Drainage ditch on Mantachie fine sandy loam.

The surface layer ranges from loamy sand to loam, and the depth to mottles ranges from 6 to 18 inches. Some areas mapped as these soils include small areas of Bibb and Iuka soils.

Most areas of these soils are cultivated, generally along with the soils of the surrounding uplands. Flash floods are likely, but the soils dry out soon after the floods. Many areas are used for truck crops. Properly drained areas are suited to row crops and pasture. (Capability unit IIw–3; woodland suitability group 6.)

Mantachie, Bibb, and Iuka soils (0 to 2 percent slopes) (Mn).—These soils are on wide bottom lands along the larger streams of the Coastal Plain. They were mapped together because, in most places, they are in such an intricate pattern that it was not practical to map them separately. Mantachie soils are somewhat poorly drained; Bibb soils are poorly drained; and Iuka soils are moderately well drained. Most areas mapped as these soils include all three soils, but the Mantachie soil is dominant. Some areas consist of only one soil and others of two.

The major horizons of a Mantachie soil are—

0 to 8 inches, dark-gray, very friable loam.
8 to 16 inches, mottled yellowish-brown and gray, friable fine sandy loam.
16 to 32 inches, gray sandy clay loam mottled with yellowish brown.

The surface layer ranges from dark gray to yellowish brown in color and from fine sandy loam to loam in texture. The depth to the upper mottled layer ranges from 6 to 12 inches. The texture of this layer ranges from fine sandy loam to sandy clay loam.

The major horizons of a Bibb soil are—

0 to 2 inches, gray, friable fine sandy loam.
2 to 7 inches, gray, friable fine sandy loam mottled with yellowish brown.
7 to 36 inches, mottled yellowish brown and gray sandy clay loam.

The surface layer ranges from light gray to dark gray in color and from fine sandy loam to loam in texture. The depth to the mottles ranges from near the surface to 6 inches. The subsoil is fine sandy loam to sandy clay loam.

The major horizons of an Iuka soil are—

0 to 7 inches, dark grayish-brown, very friable loam.
7 to 24 inches, brown, very friable fine sandy loam with gray mottles in lower part.
24 to 50 inches, light-gray, yellowish-brown, and pale-brown loamy sand.

The surface layer ranges from fine sandy loam to loam in texture and from dark grayish brown to dark brown in color. The upper subsoil is sandy loam to sandy clay loam, and the lower subsoil is loamy sand to loam.

Mantachie, Bibb, and Iuka soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Most of the acreage is covered by a dense growth of trees. (Capability unit IVw–1; woodland suitability group 4.)

Mashulaville Series

The Mashulaville series consists of nearly level, poorly drained soils on uplands of the Coastal Plain. The surface layer is gray to very dark gray sandy loam to loam. The subsoil is light-gray to gray sandy loam to sandy clay loam that is mottled with various shades of gray, yellow, and brown. A light-gray to pale-brown sandy loam to loam fragipan occurs at a depth of about 10 to 20 inches.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is low.

Mashulaville soils occur with Pheba, Ora, and Savannah soils but are not so well drained as those soils.

The Mashulaville soils are widely distributed throughout the west-central part of the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of huckleberry, hawthorn, dogwood, shrubs, and vines. Most of the acreage is in woods and pasture for which it is best suited. The use of these soils for row crops is limited.

Mashulaville loam (0 to 2 percent slopes) (Ms).—This poorly drained soil of the uplands has a fragipan at a depth of about 20 inches. The major horizons are—

0 to 6 inches, dark-gray, very friable loam.
6 to 19 inches, light-gray, friable loam mottled with brownish gray to yellowish brown.
19 to 26 inches, light gray loam fragipan with many pale-brown and yellowish-brown mottles; hard, compact, and brittle.
26 to 42 inches, mottled light-gray and yellowish-brown, firm clay.

The surface layer ranges from gray to very dark gray in color and from sandy loam to loam in texture. The subsoil, including the fragipan, ranges from sandy loam to loam. Above the fragipan, the subsoil is light gray to gray. Some areas mapped as this soil include a few small areas of Pheba and Savannah soils.

This soil is strongly acid, is low in natural fertility, and contains a small amount of organic matter. The available water capacity is low. The fragipan restricts the depth to which roots grow and limits the movement of water.

This soil is easy to till and responds well to fertilization. It is well suited to permanent pasture and pine trees. (Capability unit IVw–2; woodland suitability group 5.)

Mashulaville fine sandy loam, terrace (Mf).—This nearly level, poorly drained soil is on terraces of the Coastal Plain. The surface layer is very friable, dark-gray to grayish-brown fine sandy loam about 6 inches thick. The upper part of the subsoil, to a depth of about 11 inches, is gray, friable fine sandy loam mottled with brown. A fragipan of sandy loam to sandy clay loam occurs at a depth of 10 to 20 inches and, in some places, is hard, compact, and brittle. The lower part of the subsoil is mottled gray, brownish-yellow, and yellowish-brown sandy clay loam that is slightly compact. Some areas mapped as this soil include small areas of the Stough and Leaf soils. Also included are areas of Mashulaville soil that have a loam surface soil.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is low. The fragipan restricts the depth to which roots can grow and limits the movement of water.

If this soil is properly drained, it is well suited to permanent pasture and pine trees. (Capability unit IVw–2; woodland suitability group 5.)

Oktibbeha Series

The Oktibbeha series consists of moderately well drained, nearly level to sloping soils of the prairie uplands. The surface layer is very dark gray to brown silt loam. The upper subsoil is yellowish-red to red, firm clay, and the lower subsoil is mottled red to gray, plastic clay. Underlying the subsoil is plastic, alkaline heavy clay.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate to high.

Oktibbeha soils occur with the Vaiden and Eutaw soils. They are better drained than those soils and have a redder subsoil.

Oktibbeha soils are distributed throughout the prairie section of the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of blueberry, hawthorn, shrubs, and vines. Most of the acreage is in woods.

In this county Oktibbeha soils are mapped only with Vaiden soils in undifferentiated units. A profile of an Oktibbeha soil is described in the description of Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes.

Ora Series

The Ora series consists of nearly level to strongly sloping, moderately well drained soils of the Coastal Plain uplands. In uneroded areas the surface layer is dark-gray to brown fine sandy loam. The subsoil ranges from strong brown to yellowish brown in color and from sandy loam to clay loam in texture. A fragipan of fine sandy loam or loam is at a depth of 22 to 36 inches.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is low.

Ora soils occur with the Ruston, Savannah, and Pheba soils. They are not so well drained as the Ruston soils, which do not have a fragipan. Ora soils are similar to the Savannah soils in texture and drainage, but the subsoil of Ora soils is redder than that of the Savannah. Ora soils are better drained than the Pheba soils.

The Ora soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of sweetgum, dogwood, huckleberry, shrubs, and vines. Most of the acreage is cultivated or used for pasture, but the steeper areas are in forest.

Ora fine sandy loam, 2 to 5 percent slopes, eroded (OfB2).—This moderately well drained soil of the uplands has a friable, yellowish-red sandy loam to sandy clay loam upper subsoil that is underlain by a fragipan. The major horizons are—

0 to 5 inches, brown, very friable fine sandy loam.
5 to 24 inches, yellowish-red, friable sandy loam to sandy clay loam.
24 to 58 inches, yellowish-red sandy loam mottled with light yellowish brown to light brown; hard, compact, and brittle.

58 to 74 inches, yellowish-red sandy loam with many pale-brown mottles.

In cultivated areas the plow layer is grayish-brown to brown fine sandy loam. The surface layer in most areas is 4 to 6 inches thick, but in some areas the yellowish-red subsoil is exposed. The subsoil ranges from sandy loam to clay loam in texture and from strong brown to yellowish brown in color. The depth to the fragipan ranges from 22 to 36 inches. Shallow gullies are common, and there are many rills. Included in some mapped areas are small areas of Ruston, Savannah, and Pheba soils.

This soil is strongly acid, is low in natural fertility, and contains a small amount of organic matter. The surface layer is easily kept in good tilth, but the fragipan restricts the depth to which roots can grow and limits the moisture available to plants.

The soil responds well to fertilization. In cultivated areas, erosion is a hazard. The soil is well suited to permanent pasture, row crops, and pine trees. (Capability unit IIe–3; woodland suitability group 3.)

Ora fine sandy loam, 0 to 2 percent slopes (OfA).—This nearly level, uneroded soil has a thicker surface layer than Ora fine sandy loam, 2 to 5 percent slopes, eroded. The surface layer is 6 to 12 inches thick. Some areas mapped as this soil include small areas of Ruston, Savannah, and Pheba soils.

Most of this soil is in row crops or permanent pasture. The soil is suited to many kinds of crops and pasture plants. Graded rows and V-ditches are generally needed to remove the excess surface water that accumulates during wet periods. (Capability unit IIw–2; woodland suitability group 3.)

Ora fine sandy loam, 2 to 5 percent slopes (OfB).—This uneroded soil has a thicker surface layer than Ora fine sandy loam, 2 to 5 percent slopes, eroded. The surface layer is 6 to 12 inches thick. Included in some areas mapped as this soil are small areas of Ruston, Savannah, and Pheba soils.

This soil is used and managed in the same way as Ora fine sandy loam, 2 to 5 percent slopes, eroded. (Capability unit IIe–3; woodland suitability group 3.)

Ora fine sandy loam, 5 to 8 percent slopes (OfC).—Although this soil is more sloping and has more rapid runoff than Ora fine sandy loam, 2 to 5 percent slopes, eroded, it is uneroded and has a thicker surface layer. The surface layer is 6 to 12 inches thick. Some areas mapped as this soil include small areas of Ruston and Savannah soils.

This soil is well suited to permanent pasture, row crops, and trees. (Capability unit IIIe–3; woodland suitability group 3.)

Ora fine sandy loam, 5 to 8 percent slopes, eroded (OfC2).—This soil has a surface layer that is 3 to 6 inches thick in most places, but in many places the yellowish-red subsoil is exposed. Shallow gullies and rills are common, and there are some severely eroded or galled spots.

This soil is suited to many kinds of crops and pasture plants. Erosion is a moderate hazard, but it can be controlled in cultivated fields by careful management. Most of this soil is in crops and pasture. (Capability unit IIIe–3; woodland suitability group 3.)

Ora fine sandy loam, 8 to 12 percent slopes, eroded (OfD2).—The fragipan in this soil is at a depth of 30 to 36 inches, and generally it is not so strong as that in the less sloping Ora soils. The brown fine sandy loam surface layer is generally 3 to 6 inches thick, but in many areas the yellowish-red subsoil is exposed. Shallow gullies are common. Included in some areas mapped as this soil are small areas of Ruston and Savannah soils.

This soil is best suited to pasture and trees and is mainly used to produce them. In cultivated areas intensive management is needed to control erosion. (Capability unit IVe–3; woodland suitability group 3.)

Orangeburg Series

The Orangeburg series consists of moderately sloping to very steep, well-drained soils of the Coastal Plain uplands. In uneroded areas the surface layer is a dark-gray to brown fine sandy loam. The upper subsoil is a red to dark-red, friable heavy sandy loam to clay loam, and the lower subsoil is red to dark-red, friable sandy loam.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Orangeburg soils occur with the Ruston, Eustis, and Ora soils. They have a finer textured subsoil than the Eustis soils and do not have a fragipan as do the Ora soils. Orangeburg soils are similar to the Ruston soil in texture but are redder.

The Orangeburg soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of dogwood, blueberry, shrubs, vines, and grasses. Most of the acreage is in forest, but the more gently sloping areas are used for pasture or cultivated crops.

Orangeburg fine sandy loam, 5 to 8 percent slopes (OrC).—This well-drained soil on uplands has a friable, dark-red loamy sand to clay loam subsoil. The major horizons are—

0 to 11 inches, dark-brown to brown, very friable fine sandy loam.
11 to 26 inches, dark-red, friable loam to clay loam.
26 to 43 inches, dark-red, friable loam.
43 to 60 inches, dark-red, friable sandy loam.

In cultivated areas, the plow layer is grayish-brown to brown fine sandy loam. The surface layer ranges from 6 to 12 inches in thickness. The upper subsoil ranges from heavy sandy loam to clay loam in texture and from red to dark red in color. The lower subsoil is fine sandy loam to loamy sand. Some areas mapped as this soil include small areas of Ruston, Eustis, and Ora soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is moderate. The surface soil is easy to keep in good tilth. No dense layer restricts the growth of roots or movement of water.

This soil responds well to fertilization. In cultivated areas erosion is a hazard. The soil is well suited to permanent pasture, row crops, and pine trees. (Capability unit IIIe–1; woodland suitability group 1.)

Orangeburg fine sandy loam, 5 to 8 percent slopes, eroded (OrC2).—In most places the surface layer of this soil is grayish-brown to brown fine sandy loam that is 4 to 6 inches thick. A few shallow gullies occur. Included in some areas mapped as this soil are areas that have a plow layer of reddish-brown to red sandy clay loam. Also included are small areas of Ruston, Eustis, and Ora soils.

This soil is well suited to permanent pasture and pine trees and is fairly well suited to cultivated crops. Erosion is a hazard in cultivated fields. (Capability unit IIIe–1; woodland suitability group 1.)

Orangeburg fine sandy loam, 5 to 8 percent slopes, severely eroded (OrC3).—The plow layer of this soil is a brown to reddish-brown heavy sandy loam to clay loam that is a mixture of the upper part of the subsoil and remnants of the original surface layer. Many small gullies and a few deep ones occur. Some areas mapped as this soil include small areas of Ruston, Eustis, and Ora soils.

Although it has been cultivated, this soil is now used for pasture and trees. Because erosion is a severe hazard, intensive management is needed in cultivated fields. (Capability unit IVe–1; woodland suitability group 1.)

Orangeburg fine sandy loam, 8 to 12 percent slopes (OrD).—This strongly sloping soil has faster runoff, a greater erosion hazard, and a thinner surface layer than has Orangeburg fine sandy loam, 5 to 8 percent slopes. The surface layer is generally only 4 to 6 inches thick, but in a few small areas it is 6 to 12 inches thick. Some areas mapped as this soil include a few small areas of Eustis and Ruston soils.

This soil is best suited to trees and pasture and is mainly used for them. In cultivated areas, intensive management is needed to control erosion. (Capability unit IVe–1; woodland suitability group 1.)

Orangeburg fine sandy loam, 8 to 12 percent slopes, severely eroded (OrD3).—This severely eroded soil has faster runoff than Orangeburg fine sandy loam, 5 to 8 percent slopes, and a surface layer that consists of the original surface soil mixed with the subsoil. The present surface layer is reddish brown to brown instead of dark brown to brown. Small gullies and many rills occur. Included in some areas mapped as this soil are small areas of Ruston and Eustis soils.

Much of this soil has been cultivated, but it is now used mainly for trees and pasture. Because of the hazard of further erosion, this soil is not suitable for cultivation. (Capability unit VIe–1; woodland suitability group 1.)

Orangeburg fine sandy loam, 12 to 17 percent slopes (OrE).—This soil has a brown to strong-brown surface layer of fine sandy loam that ranges from 5 to 12 inches in thickness. The subsoil is red sandy loam to loam, and in some included eroded areas, it is at the surface. A few shallow and deep gullies occur. Also included in some areas mapped as this soil are small areas of Eustis and Ruston soils.

Most of this soil is in permanent pasture or trees. (Capability unit VIe–1; woodland suitability group 1.)

Orangeburg fine sandy loam, 17 to 35 percent slopes (OrF).—This steep soil has a surface layer of brown to strong-brown fine sandy loam that ranges from 10 to 15 inches in thickness. This layer is generally coarser textured than the surface layer of Orangeburg fine sandy loam, 5 to 8 percent slopes. In some included areas the surface layer is loam or loamy sand. Also included are areas that have a surface layer 4 to 6 inches thick and a few areas of Eustis and Ruston soils.

Most of this soil is in trees, for which it is best suited. (Capability unit VIIe–1; woodland suitability group 1.)

Pheba Series

The Pheba series consists of nearly level to gently sloping, somewhat poorly drained soils of the Coastal Plain uplands. The surface layer is gray to very dark grayish-brown fine sandy loam to silt loam. The subsoil is grayish-brown to yellow fine sandy loam to loam. A sandy loam to loam fragipan occurs at a depth of 10 to 24 inches.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is low to moderate.

Pheba soils occur with the Savannah, Ora, and Mashulaville soils. They have a paler subsoil than the Savannah and Ora soils and are not so well drained. The Pheba soils are better drained than the Mashulaville soils and are not so gray in the subsoil.

The Pheba soils are widely distributed throughout the county. The native vegetation consists of hardwoods and pines in mixed stands and an understory of dogwood, hawthorn, shrubs, vines, and grasses. Much of the acreage has been cleared and is now used for pasture and row crops.

Pheba fine sandy loam, 0 to 2 percent slopes (PhA).—This somewhat poorly drained soil has a fragipan at a depth of about 15 inches. The major horizons are—

0 to 7 inches, dark grayish-brown to grayish-brown, friable fine sandy loam.
7 to 15 inches, pale-yellow, friable loam mottled with light gray.
15 to 29 inches, mottled light-gray, pale yellow, and yellowish-brown sandy loam to loam fragipan; compact, brittle, and hard.
29 to 40 inches, light-gray, friable sandy clay loam.

In cultivated areas the plow layer is dark grayish-brown to grayish-brown fine sandy loam. The surface layer ranges from 6 to 10 inches in thickness. The subsoil ranges from fine sandy loam to loam in texture and from grayish brown to yellow in color. The fragipan—hard, compact, brittle sandy loam to loam—is at a depth of 10 to 24 inches. Included in some areas mapped as this soil are small areas of Mashulaville and Prentiss soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The surface layer is easily kept in good tilth. The fragipan restricts the depth to which roots can grow and limits the moisture available to plants.

This soil responds well to fertilization. Because surface runoff and infiltration are slow, graded rows and W-ditches are generally needed to remove excess surface water in wet periods. If properly managed, this soil is suited to row crops, pasture, and trees. (Capability unit IIIw-1; woodland suitability group 8.)

Pheba fine sandy loam, 2 to 5 percent slopes (PhB).—This soil has a profile that is similar to that of Pheba fine sandy loam, 0 to 2 percent slopes, but in some small areas the surface layer is 1 to 3 inches thinner. Surface drainage is better on this gently sloping soil, but the erosion hazard is greater. Included in some areas mapped as this soil are small areas of the moderately well drained Tilden and Prentiss soils.

This soil is suited to row crops, pasture, and trees. (Capability unit IIIw 1; woodland suitability group 8.)

Prentiss Series

The Prentiss series consists of nearly level to gently sloping, moderately well drained soils that occur on ter-

races and have a fragipan. In uneroded areas the surface layer is dark-gray to very pale brown fine sandy loam. The subsoil is yellowish-brown to yellow, friable heavy sandy clay to clay loam. The fragipan occurs at a depth of 18 to 36 inches.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Prentiss soils occur with the Cahaba, Tilden, and Stough soils. The fragipan that is characteristic of the Prentiss soils does not occur in the Cahaba soils. Prentiss soils are similar to the Tilden soils in texture but are lighter textured in the subsoil.

The Prentiss soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of huckleberry, hackberry, dogwood, sweetgum, shrubs, and vines. Much of the acreage of these soils is cultivated or in pasture.

Prentiss fine sandy loam, 0 to 2 percent slopes (PrA).—This moderately well drained soil on terraces has a fragipan. The major horizons are—

0 to 11 inches, dark grayish-brown to very pale brown, friable fine sandy loam.
11 to 22 inches, yellowish-brown, friable heavy loam.
22 to 44 inches, mottled yellowish-brown loam to clay loam fragipan; brittle, compact, and hard.
44 to 68 inches, mottled yellowish-brown, gray, and yellowish-red, firm clay loam.

In cultivated areas the plow layer is dark grayish brown to very pale brown. The surface layer ranges from 6 to 10 or more inches in thickness. The subsoil ranges from heavy sandy loam to clay loam in texture and from yellowish brown to yellow in color. The fragipan is mottled yellowish-brown sandy loam to clay loam. It occurs at a depth of 18 to 36 inches. Some areas mapped as this soil include small areas of Tilden and Stough soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is moderate. Tilling the surface layer is easy. The fragipan restricts the depth to which roots can grow and limits the moisture available to plants.

This soil responds well to fertilization. Because surface runoff and infiltration are slow, graded rows and W-ditches are generally needed to remove excess surface water in wet periods. Under good management, this soil is well suited to crops, pasture, and trees. (Capability unit IIw–2; woodland suitability group 3.)

Prentiss fine sandy loam, 2 to 5 percent slopes (PrB).—The surface layer of this soil is generally 6 to 10 inches thick and is generally thinner than the surface layer of Prentiss fine sandy loam, 0 to 2 percent slopes. Also, surface drainage is better, and the erosion hazard is greater. In a few small areas the surface layer is only 3 to 6 inches thick. Included in some areas mapped as this soil are small areas of Tilden and Stough soils.

This soil is suited to many kinds of crops. Much of the acreage is cleared and is used for pasture and crops. (Capability unit IIe–3; woodland suitability group 3.)

Ruston Series

The Ruston series consists of nearly level to very steep, well-drained soils of the Coastal Plain uplands. In uneroded areas the surface layer is grayish-brown, friable heavy sandy loam to clay loam, and the lower subsoil is red, very friable fine sandy loam.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. They are moderate in available water capacity.

Ruston soils are next to or near the Orangeburg, Eustis, Ora, and Savannah soils. They do not have the fragipan that is characteristic of the Ora and Savannah soils, and the subsoil of Ruston soils is finer textured than that of the Eustis. Ruston soils are similar to the Orangeburg soils in texture but are not so red.

The Ruston soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of dogwood, hawthorn, shrubs, and grasses. Most of the acreage is in forest, but the more gently sloping areas are cultivated or used for pasture.

Ruston fine sandy loam, 5 to 8 percent slopes, eroded (RuC2).—This well-drained soil on uplands has a subsoil of friable, yellowish-red to red loamy sand to sandy clay loam. The major horizons are—

0 to 4 inches, grayish-brown, very friable fine sandy loam.
4 to 16 inches, red, friable sandy clay loam.
16 to 50 inches, yellowish-red to red, very friable fine sandy loam.

In cultivated areas the plow layer is gray to grayish-brown fine sandy loam. The surface layer ranges from 4 to 6 inches in thickness, but in many included areas the red subsoil is exposed. The upper subsoil is yellowish-red to red heavy sandy loam to clay loam, and the lower subsoil is fine sandy loam to loamy sand. A few shallow gullies occur. Some areas mapped as this soil include small areas of Orangeburg and Eustis soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is moderate. The soil is easy to till, and a dense layer does not restrict the growth of roots or the movement of water.

This soil responds well to fertilization, but erosion is a hazard in cultivated areas. The soil is well suited to permanent pasture, row crops, and pine trees. (Capability unit IIIe–1; woodland suitability group 1.)

Ruston fine sandy loam, 0 to 2 percent slopes (RuA).—This nearly level soil has a thicker surface layer than Ruston fine sandy loam, 5 to 8 percent slopes, eroded, and is less susceptible to erosion. The surface layer is 6 to 12 inches thick. Included in areas mapped as this soil are a few small areas that have a browner surface layer and a redder subsoil.

Almost all of this soil is cultivated. The soil is well suited to many kinds of crops and pasture. If it is well managed, it is not likely to eroded. (Capability unit I–1; woodland suitability group 1.)

Ruston fine sandy loam, 2 to 5 percent slopes (RuB).—The surface layer of this soil is fine sandy loam 8 to 10 inches thick. It is dark grayish brown to a depth of 1 to 3 inches and grayish brown below that depth. Some areas mapped as this soil include small areas of Orangeburg and Eustis soils.

Much of this soil is wooded. The soil is suited to many kinds of crops. If management is good, few special practices are needed. (Capability unit IIe–1; woodland suitability group 1.)

Ruston fine sandy loam, 2 to 5 percent slopes, eroded (RuB2).—The surface layer of this eroded soil is 4 to 6 inches thick, but in many areas the yellowish-red to red subsoil is exposed. A few shallow gullies occur in some places. Included in some areas mapped as this soil are areas of Eustis and Orangeburg soils.

Almost all of this soil has been cultivated, and much of it is still in row crops or is in pasture (fig. 4). In cultivated areas careful management is needed to control erosion. (Capability unit IIe–1; woodland suitability group 1.)

Ruston fine sandy loam, 5 to 8 percent slopes (RuC).—The surface layer of this soil is 8 to 10 inches thick and is dark grayish brown in the upper 1 to 3 inches and grayish brown below. Some areas mapped as this soil include small areas of Eustis and Orangeburg soils.

Most of this soil is wooded. (Capability unit IIIe–1; woodland suitability group 1.)

Ruston fine sandy loam, 5 to 8 percent slopes, severely eroded (RuC3).—The surface layer of this soil is strong brown to yellowish red and consists of remnants of the original surface layer and the upper part of the subsoil. Shallow gullies are common, and there are a few deep ones. Included with this soil are areas that have a heavy sandy loam surface layer and areas with a surface layer ranging from very fine sandy loam to clay loam. Also included are small areas of Eustis and Orangeburg soils.

Although this soil has been cultivated, it is now used for pasture and trees. Because erosion is a hazard, intensive management is needed in cultivated areas. (Capability unit IVe–1; woodland suitability group 1.)

Ruston fine sandy loam, 8 to 12 percent slopes (RuD).—This uneroded soil is steeper than Ruston fine sandy loam, 5 to 8 percent, eroded, and has faster runoff and a thicker surface layer. The surface layer is 6 to 12 inches thick. Included in some areas mapped as this soil are small areas of Eustis and Orangeburg soils.

The soil is best suited to pasture. Intensive management is needed in cultivated areas to control erosion. (Capability unit IVe–1; woodland suitability group 1.)

Ruston fine sandy loam, 8 to 12 percent slopes, eroded (RuD2).—The surface layer of this soil is grayish-brown fine sandy loam that ranges from 5 to 7 inches in thickness. In some included areas the reddish subsoil is exposed. A few shallow gullies occur in some places. Some areas mapped as this soil include small areas of Orangeburg and Eustis soils.

Figure 4.—**Bahiagrass pasture on Ruston fine sandy loam, 2 to 5 percent slopes, eroded.**

This soil is best suited to pasture and trees and is mainly used for them. In cultivated areas intensive management is needed to control erosion. (Capability unit IVe–1; woodland suitability group 1.)

Ruston fine sandy loam, 8 to 12 percent slopes, severely eroded (RuD3).—This soil has a thinner surface layer, steeper slopes, and greater runoff than Ruston fine sandy loam, 5 to 8 percent slopes, eroded. The surface layer is a brown to yellowish-red mixture of the original surface soil and the subsoil. Small gullies and many rills occur. Included in some areas mapped as this soil are small areas of Eustis and Orangeburg soils.

Much of this soil has been cultivated, but most of it is now used for trees and pasture. The soil is not suited to cultivated crops. (Capability unit VIe–1; woodland suitability group 1.)

Ruston fine sandy loam, 12 to 17 percent slopes (RuE).—This soil is distinguished from Ruston fine sandy loam, 5 to 8 percent slopes, eroded, by its steeper slopes, greater runoff, thicker surface layer, and coarser textured subsoil. Its surface layer is 10 to 15 inches thick, and its subsoil is sandy loam and loamy sand. Some areas mapped as this soil include small areas of Eustis and Orangeburg soils.

Only a small acreage of this soil has been cleared. Most of the soil is used for forest. (Capability unit VIe–1; woodland suitability group 1.)

Ruston fine sandy loam, 12 to 17 percent slopes, eroded (RuE2).—The surface layer of this soil is grayish-brown fine sandy loam 6 to 8 inches thick. Generally, the subsoil is only 10 to 15 inches thick. Shallow gullies are common. Included are some areas where the reddish subsoil is exposed and some areas where the surface layer ranges from sandy loam to loamy fine sand. Also included are some small areas of Eustis and Orangeburg soils.

Some of this soil has been cultivated, but all of the soil is now in trees or pasture. (Capability unit VIe–1; woodland suitability group 1.)

Ruston fine sandy loam, 12 to 17 percent slopes, severely eroded (RuE3).—This severely eroded soil has steeper slopes, greater runoff, a thinner surface layer, and a coarser textured subsoil than Ruston fine sandy loam, 5 to 8 percent slopes, eroded. The surface layer is brown to yellowish-red fine sandy loam, and the subsoil is sandy loam to loam. Many rills and small gullies occur. Some areas mapped as this soil include small areas of Eustis and Orangeburg soils.

Some of this soil has been cultivated, but most of it is now in forest. (Capability unit VIIe–1; woodland suitability group 1.)

Ruston fine sandy loam, 17 to 35 percent slopes (RuF).—This uneroded soil is distinguished from Ruston fine sandy loam, 5 to 8 percent slopes, eroded, by its steeper slopes, greater runoff, thicker surface layer, and coarser textured subsoil. The surface layer is 10 to 15 inches thick, and the subsoil is sandy loam to loam. Included with this soil are areas that have a loamy sand or sandy loam surface layer. Also included are small areas of Eustis and Orangeburg soils.

Most of this soil is in trees, for which it is best suited. (Capability unit VIIe–1; woodland suitability group 1.)

Ruston fine sandy loam, 17 to 35 percent slopes, eroded (RuF2).—This soil has a grayish brown surface layer that is 6 to 8 inches thick and a subsoil that is 10 to 15 inches thick. Shallow gullies are common. Included in mapped areas are a few places that have a loamy sand surface layer and a few places where the reddish subsoil is exposed. Also included are a few small areas of Eustis and Orangeburg soils.

This soil is mainly in trees and is best suited for them. Because slopes are steep, erosion is a severe hazard. (Capability unit VIIe 1; woodland suitability group 1.)

Sandy Alluvial Land

Sandy alluvial land is a land type that consists of excessively drained alluvium that was recently deposited along the larger streams in the county.

Sandy alluvial land (Sa).—In most places this land type is made up of layers of recently deposited sand, loamy sand, and sandy loam, but in some places it is mixed sand and gravel. The material is white and light gray near the surface, but deeper it is dark gray, yellow, and brown.

This land is low in natural fertility and medium acid or strongly acid. The water-holding capacity is very low.

Much of this land is in hardwoods. The land is not suited to pasture or row crops and is fairly well suited to trees. It is a valuable source of sand and gravel that are used in construction. (Capability unit Vw 1; woodland suitability group 11.)

Savannah Series

The Savannah series consists of nearly level to moderately sloping, well-drained soils of the Coastal Plain uplands. The surface layer is dark gray to pale-brown fine sandy loam. The upper subsoil is yellow to yellowish brown and friable, and at a depth of 18 to 36 inches a fragipan occurs.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Savannah soils occur with the Ora, Pheba, and Ruston soils. They are yellower in the subsoil than the Ora soils and are better drained than the Pheba soils. The distinct fragipan of the Savannah soils is missing in the Ruston soils.

The Savannah soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of dogwood, huckleberry, hawthorn, low shrubs, vines, and grasses. Most of the acreage has been cleared and is used for pasture and row crops. These soils are suited to most crops commonly grown in the county.

Savannah fine sandy loam, 2 to 5 percent slopes, eroded (SfB2).—This moderately well drained, productive soil has a fragipan at a depth of 22 inches. The main horizons are—

0 to 4 inches, brown, very friable fine sandy loam.
4 to 22 inches, light yellowish-brown to yellowish-brown, friable loam.
22 to 49 inches, mottled light-gray to yellowish-red fragipan of fine sandy loam; friable, brittle, compact, and hard.
49 to 65 inches, mottled light-gray to red, friable sandy clay loam.

In cultivated areas the plow layer is pale-brown fine sandy loam. The surface layer ranges from 3 to 5 inches in thickness, but in some included areas the subsoil is exposed. Shallow gullies occur. The upper subsoil ranges from heavy sandy loam to sandy clay loam in texture and from yellow to yellowish brown in color. The depth to the fragipan ranges from 18 to 36 inches. Some areas mapped as this soil include small areas of Ora and Pheba soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. It has moderate available water capacity. The surface layer is easy to keep in good tilth, but the fragipan restricts the depth to which roots can grow and limits the moisture available to plants.

This soil responds well to fertilization. In cultivated areas erosion is a hazard. The soil is well suited to row crops, permanent pasture, and pine trees. (Capability unit IIe 3; woodland suitability group 3.)

Savannah fine sandy loam, 0 to 2 percent slopes (SfA).—This nearly level soil has a thicker surface layer than Savannah fine sandy loam, 2 to 5 percent slopes, eroded. The surface layer is 6 to 12 inches thick. Because surface runoff and infiltration are slow, graded rows and V-ditches are generally needed to remove excess surface water. Included in some areas mapped as this soil are small areas of Ora and Pheba soils.

If this soil is managed well, erosion is not a hazard. Almost all of the soil is in cultivated crops or permanent pasture. (Capability unit IIw–2; woodland suitability group 3.)

Savannah fine sandy loam, 2 to 5 percent slopes (SfB).—The surface layer of this uneroded soil is 6 to 12 inches thick and is thicker than the surface layer of Savannah fine sandy loam, 2 to 5 percent slopes, eroded. In other respects the two soils are similar; they are used and managed in the same way. Included in some mapped areas of this soil are small areas of Ora and Pheba soils. (Capability unit IIe–3; woodland suitability group 3.)

Savannah fine sandy loam, 5 to 8 percent slopes, eroded (SfC2).—This soil has a plow layer of pale-brown to brown fine sandy loam 3 to 5 inches thick. In many areas yellow to yellowish-brown subsoil material is exposed. Shallow gullies and severely eroded galled spots are common. Also included in some areas mapped as this soil are small areas of Ora and Pheba soils.

This soil is suited to many kinds of crops, but careful management is needed to control erosion in cultivated areas. The soil is well suited to permanent pasture and pine trees. (Capability unit IIIe–3; woodland suitability group 3.)

Shubuta Series

The Shubuta series consists of gently sloping to strongly sloping, moderately well drained soils of the Coastal Plain uplands. These soils have a surface layer of dark-gray to pale-brown fine sandy loam to sandy clay loam and a subsoil of heavy sandy clay loam to clay.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. They are moderate in available water capacity.

The Shubuta soils occur with the Ruston, Ora, and Boswell soils. They lack the fragipan of the Ora soils. Shubuta soils have a finer textured subsoil than the Ruston and Boswell soils and are underlain by coarser textured material than the Boswell. Also, the subsoil of Shubuta soils is thicker and more friable than that of the Boswell soils, and mottling is deeper.

Shubuta soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of huckleberry, hawthorn, shrubs, vines, and grasses. Most of the acreage is in forest, but the more gently sloping areas are cultivated or used for pasture.

Shubuta fine sandy loam, 5 to 8 percent slopes (ShC).—This moderately well drained soil on uplands has a friable, strong-brown to red sandy clay loam to clay subsoil. The major horizons are—

0 to 11 inches, dark-gray to pale-brown, very friable fine sandy loam.
11 to 31 inches, red, friable clay loam to sandy clay loam.
31 to 46 inches, red clay mottled with brownish yellow.
46 to 60 inches, mottled red and brownish-yellow, friable sandy clay loam.

The surface layer ranges from 6 to 12 inches in thickness and from dark gray to pale brown in color. The subsoil ranges from strong brown to red and from heavy sandy clay loam to clay.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is moderate.

This soil produces fairly high yields. (Capability unit IIIe–2; woodland suitability group 2.)

Shubuta fine sandy loam, 2 to 5 percent slopes (ShB).—This soil has a profile similar to that of Shubuta fine sandy loam, 5 to 8 percent slopes, but slopes are more gentle, runoff is slower, and the erosion hazard is less. Included in some areas mapped as this soil are small areas with slopes of 0 to 2 percent and small areas of the coarser textured Ruston soils.

Although this soil is low in natural fertility, it is more suitable for cultivation than Shubuta fine sandy loam, 5 to 8 percent slopes. If large amounts of fertilizer are applied, many kinds of crops and pasture plants can be grown and pecan trees are also suitable. Most of the soil has been cleared and is used for pasture and row crops. (Capability unit IIe–2; woodland suitability group 2.)

Shubuta fine sandy loam, 2 to 5 percent slopes, eroded (ShB2).—The grayish-brown fine sandy loam surface layer of this soil is 3 to 6 inches thick, but in many areas the strong-brown to red sandy clay loam subsoil is exposed and there are a few shallow gullies. Included in some areas mapped as this soil are small areas of Boswell, Ruston, and Ora soils.

Much of this soil is cultivated. The soil is well suited to row crops and pasture if management is moderately intensive. (Capability unit IIe–2; woodland suitability group 2.)

Shubuta fine sandy loam, 5 to 8 percent slopes, eroded (ShC2).—The surface layer of this soil is grayish-brown fine sandy loam that is 3 to 6 inches thick. In many areas the strong-brown to reddish sandy clay loam subsoil is exposed. Shallow gullies are common. Also included in areas mapped as this soil are small areas of Boswell, Ruston, and Ora soils. (Capability unit IIIe–2; woodland suitability group 2.)

Shubuta fine sandy loam, 8 to 12 percent slopes (ShD).—The profile of this soil is similar to that of Shubuta fine sandy loam, 5 to 8 percent slopes, but slopes are stronger, runoff is more rapid, and the erosion hazard is greater. In some areas mapped as this soil are small areas of the medium-textured Ruston and Ora soils and the fine-textured Boswell soils.

This soil can be used for clean-tilled crops only if they are in a rotation with sod crops grown for long periods. (Capability unit IVe–2; woodland suitability group 2.)

Shubuta fine sandy loam, 8 to 12 percent slopes, eroded (ShD2).—The surface layer of this soil is grayish-brown fine sandy loam 3 to 6 inches thick, but in many areas the strong-brown to reddish sandy clay subsoil is exposed. Depth to mottles ranges from 12 to 18 inches. Shallow gullies are common. Some areas mapped as this soil include small areas of Ruston, Boswell, and Ora soils.

In cultivated areas intensive management is needed to control further erosion. (Capability unit IVe–2; woodland suitability group 2.)

Shubuta sandy clay loam, 5 to 8 percent slopes, severely eroded (ShC3).—The surface layer of this soil is reddish-brown to red sandy clay loam 4 to 5 inches thick. It consists primarily of the reddish sandy clay subsoil mixed with remnants of the original surface layer. Shallow gullies are common, and a few deep ones occur. Included in some areas mapped as this soil are areas that have a red clay loam surface layer. Also included are small areas of Ruston, Boswell, and Ora soils.

In cultivated areas very careful management is needed to control erosion. This soil is best suited to trees and is fairly well suited to pasture. (Capability unit IVe–2; woodland suitability group 2.)

Shubuta sandy clay loam, 8 to 12 percent slopes, severely eroded (ShD3).—The surface layer of this soil is red sandy clay loam 4 to 5 inches thick, but in some areas the surface layer is red clay loam. Shallow gullies are common, and a few deep ones occur. Included in some small areas mapped as this soil are small areas of Boswell, Ruston, and Ora soils.

Most of this soil has been cultivated but has reverted to trees and is well suited to them. It is fairly well suited to permanent pasture. (Capability unit VIe–2; woodland suitability group 2.)

Stough Series

The Stough series consists of nearly level, somewhat poorly drained soils that are on terraces and have a fragipan. In uneroded areas the surface layer is very dark gray to grayish-brown sandy loam. The subsoil is pale-brown to light yellowish brown sandy loam to light clay loam. The fragipan is weak to strong and occurs at a depth of 10 to 24 inches.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. They are low to moderate in available water capacity.

Stough soils occur with the Prentiss, Tilden, and Mashulaville soils. They are not so well drained as the Prentiss and Tilden soils and have a lighter colored, more mottled subsoil. Stough soils have a browner subsoil that is less mottled with gray than that of the Mashulaville soils.

The Stough soils are widely distributed throughout the county. The native vegetation consists of pines and hardwoods in mixed stands and an undergrowth of huckleberry, hackberry, dogwood, shrubs, vines, and grasses. Part of the acreage has been cleared and is used for crops and pasture.

Stough fine sandy loam, 0 to 2 percent slopes (StA).—This somewhat poorly drained soil on terraces has a fragipan. The major horizons are—

0 to 11 inches, very dark gray to pale-olive, very friable fine sandy loam.
11 to 18 inches, light yellowish-brown, friable sandy loam with many yellowish-brown and pale-olive mottles.
18 to 58 inches, mottled light-gray to strong-brown sandy clay loam (fragipan); brittle, compact, and hard.
58 to 65 inches, mottled light-gray, yellowish-brown, and red sandy clay loam; friable to firm.

In cultivated areas the surface layer is gray to grayish-brown fine sandy loam. It is 6 to 10 inches thick. The subsoil ranges from pale yellow to light yellowish brown in color and from sandy loam to light clay loam in texture. The fragipan is sandy loam to sandy clay loam and is hard, compact, and brittle. It is mottled gray to strong brown and occurs at a depth of 10 to 24 inches. Included in some areas mapped as this soil are small areas of Tilden, Prentiss, and Mashulaville soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The surface soil is easy to till. The fragipan restricts the depth to which roots can grow and limits the moisture available to plants.

This soil responds well to fertilization. Because runoff and infiltration are slow, graded rows and W-ditches are generally needed to remove excess surface water in wet periods. Under good management, this soil is suited to row crops, pasture, and trees. (Capability unit IIIw–1; woodland suitability group 8.)

Sumter Series

The Sumter series consists of moderately well drained, gently sloping soils of the prairie uplands. These soils developed from Selma chalk. In uneroded areas the surface layer is very dark grayish-brown to light olive-brown clay. The subsoil is pale-olive to olive-yellow, firm clay that is underlain by calcareous Selma chalk.

These soils have a mildly alkaline surface layer and a moderately alkaline subsoil. They contain a small amount of organic matter and are moderate in natural fertility. The available water capacity is high.

Sumter soils occur with the Houston and Vaiden soils and are more alkaline than the strongly acid Vaiden soils. Sumter soils are shallower to Selma chalk than are the Houston soils.

Sumter soils are widely distributed throughout the prairie section of the county. The native vegetation is grass, and most of the acreage is in permanent pasture.

Sumter clay, 2 to 5 percent slopes, eroded (SuB2).—This moderately well drained soil of prairie uplands has a clay surface layer and a calcareous clay subsoil. The major horizons are—

0 to 8 inches, very dark grayish-brown, firm clay.
8 to 36 inches, olive-yellow to yellow clay; firm and plastic; many lime nodules.

The surface layer ranges from very dark grayish brown to light olive brown in color and generally from 4 to 6 inches in thickness. In a few places the subsoil is very dark gray. The olive-yellow subsoil is exposed in a few areas, and a few shallow gullies occur. Also included are small areas of Houston and Vaiden soils.

This soil is mildly alkaline or moderately alkaline, contains a small amount of organic matter, and is low in natural fertility. The available water capacity is high.

Although some of this soil has been cropped, all of it is now used for pasture, for which it is well suited. (Capability unit IIe–4; woodland suitability group 14.)

Sumter clay, 2 to 5 percent slopes, severely eroded (SuB3).—The surface layer of this soil is mainly olive-yellow, firm clay. In many areas thin remnants of the original, dark grayish-brown surface layer remain, and in other areas the surface layer is a mixture of the dark grayish-brown and olive-yellow clay. Shallow gullies are common, and in places a few deep gullies occur. Included in mapping this soil may be small areas of Huston and Vaiden soils.

This severely eroded soil is best suited to pasture or trees. (Capability unit IIIe–5; woodland suitability group 14.)

Sumter clay, 5 to 8 percent slopes, eroded (SuC2).—In most places the surface layer of this soil ranges from very dark grayish brown to light olive brown in color and from 4 to 6 inches in thickness. In other places the olive-yellow subsoil is exposed. A few shallow gullies occur. Some areas mapped as this soil include small areas of Houston and Vaiden soils.

The soil is best suited to pasture and is mainly used for it. (Capability unit IIIe–5; woodland suitability group 14.)

Sumter clay, 5 to 12 percent slopes, severely eroded (SuD3).—In most areas the surface layer of this soil consists of olive-yellow, firm clay that was formerly subsoil, but in some areas are remnants of the original dark grayish-brown surface layer. Many shallow gullies occur, and deep gullies are common. Included in some areas mapped as this soil are small areas of Houston and Vaiden soils.

This soil is best suited to pasture and is mainly used for it. (Capability unit VIe–5; woodland suitability group 14.)

Tilden Series

The Tilden series consists of gently sloping to moderately sloping, moderately well drained soils that occur on terraces and have a fragipan. The surface layer is dark-gray to dark yellowish-brown fine sandy loam. The subsoil is strong-brown to yellowish-red sandy loam to clay loam. The fragipan of fine sandy loam or loam occurs at a depth of 22 inches or more.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Tilden soils are next to the Cahaba, Prentiss, and Stough soils. They are not so well drained as the Cahaba soils, which do not have a fragipan. They are browner or redder than the Prentiss soils and are better drained than the Stough soils.

Tilden soils are widely distributed throughout the county. The native vegetation consists of pines and hard-

woods in mixed stands and an understory of huckleberry, hackberry, dogwood, shrubs, vines, and grasses. Much of the acreage is cultivated or pastured . These soils are suited to most crops commonly grown in the county.

Tilden fine sandy loam, 2 to 5 percent slopes (TfB).—This moderately well drained soil on terraces has a strong-brown to yellowish-red subsoil. The major horizons are—

0 to 8 inches, dark grayish-brown fine sandy loam.
8 to 22 inches, yellowish-brown to yellowish-red, friable loam.
22 to 45 inches, strong-brown loam fragipan mottled with pale brown and yellowish red; compact, brittle, and hard.

In wooded areas the surface layer is dark gray. The subsoil ranges from sandy loam to clay loam in texture and from strong brown to yellowish brown in color. The fragipan is at a depth of 22 to 36 inches. Some areas mapped as this soil include small areas of Cahaba and Prentiss soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The surface layer is easy to keep in good tilth. The fragipan restricts the depth to which roots can grow and limits the moisture available to plants.

Much of this soil is in pasture or cultivated crops. (Capability unit IIe 3; woodland suitability group 3.)

Tilden fine sandy loam, 0 to 2 percent slopes (TfA).—Although the profile of this nearly level soil is similar to that of Tilden fine sandy loam, 2 to 5 percent slopes, runoff and the erosion hazard are less. Some areas mapped as this soil include small areas of Prentiss or Cahaba soils.

Because this soil is nearly level, graded rows and W-ditches are generally needed to remove excess surface water in wet periods. This soil is suited to many kinds of row crops and pasture plants. Most of the acreage has been cleared and is used for row crops and pasture. (Capability unit IIw–2; woodland suitability group 3.)

Tilden fine sandy loam, 2 to 5 percent slopes, eroded (TfB2).—Most of this soil has a surface layer of dark grayish-brown fine sandy loam that is 4 to 6 inches thick, but in one-fourth of the acreage the yellowish-red subsoil is exposed. In some places a few rills or shallow gullies occur. Included in some areas mapped as this soil are small areas of Cahaba and Prentiss soils.

This soil is suited to many kinds of crops, but it is susceptible to erosion if it is cultivated. Careful management is needed. Much of the soil is in crops and pasture. (Capability unit IIe–3; woodland suitability group 3.)

Tilden fine sandy loam, 5 to 8 percent slopes, eroded (TfC2).—This soil has a dark grayish-brown fine sandy loam surface layer 3 to 5 inches thick, but in many included areas the yellowish-red subsoil is exposed. A few shallow gullies occur in some places. Some areas mapped as this soil include small areas of Cahaba and Prentiss soils.

This soil is suited to many kinds of crops. Because of the slopes, however, erosion is a hazard and careful management is needed. Much of the soil is in crops and pasture. (Capability unit IIIe–3; woodland suitability group 3.)

Vaiden Series

The Vaiden series consists of moderately well drained to somewhat poorly drained, nearly level to strongly sloping soils of the prairie uplands. The surface layer is dark-gray to dark grayish-brown silt loam to clay. The upper subsoil is pale-olive to yellowish-brown clay, and the lower subsoil is mottled yellowish-brown to gray clay.

These soils are strongly acid, but they are underlain by heavy, plastic, alkaline clay parent material. They are low to moderate in natural fertility and contain a small amount of organic matter.

Vaiden soils are next to or near the Eutaw, Oktibbeha, Sumter, and Houston soils. They are better drained than the Eutaw soils. The subsoil of Vaiden soils is yellower than that of the Eutaw soils but is not so red as that of the Oktibbeha soils. Vaiden soils are strongly acid whereas the Houston and Sumter soils are neutral and mildly alkaline.

Vaiden soils are widely distributed throughout the prairie section of the county. The native vegetation consists of pines and hardwoods in mixed stands and an understory of blueberry, hawthorn, shrubs, vines, and grasses. Most of the acreage is wooded, but small, gently sloping areas are cultivated or used for pasture.

Vaiden clay, deep, 2 to 5 percent slopes, eroded (VaB2).—This somewhat poorly drained soil of the prairie uplands has a clay surface layer. The major horizons are—

0 to 3 inches, dark grayish-brown, friable clay.
3 to 14 inches, pale-brown to yellowish-brown clay mottled with gray and red; firm and plastic.
14 to 38 inches, mottled light-gray, yellowish-brown, and red clay; firm and plastic.

The surface layer ranges from 3 to 5 inches in thickness and generally is dark grayish brown. It has a yellowish cast in many places because material from the yellowish-brown subsoil has been mixed with it.

The upper subsoil is pale olive to light yellowish brown, and the lower subsoil is mottled. A few shallow gullies occur in many areas. Some areas mapped as this soil include small areas of Eutaw, Sumter, Oktibbeha, and Houston soils.

This soil is strongly acid, but it is underlain by alkaline, plastic heavy clay at a depth of about 6 feet. It contains a small amount of organic matter and is low to moderate in natural fertility. The slowly permeable subsoil is very sticky and plastic.

This soil is well suited to permanent pasture and trees and is fairly well suited to row crops. (Capability unit IIIe-6; woodland suitability group 12.)

Vaiden clay, deep, 0 to 2 percent slopes (VaA).—The surface layer of this uneroded soil is thicker than that of Vaiden clay, deep, 2 to 5 percent slopes, eroded. It is 6 to 10 inches thick. Because runoff and infiltration are slow, surface water is a problem. Some areas mapped as this soil include small areas of Eutaw, Sumter, and Houston soils.

Most of this soil is wooded. It is suited to pasture and trees. (Capability unit IIIw-4; woodland suitability group 12.)

Vaiden clay, deep, 2 to 5 percent slopes (VaB).—The surface layer of this soil ranges from 5 to 10 inches in thickness and from dark gray to dark grayish brown in color. Included in some areas mapped as this soil are small areas of Eutaw, Oktibbeha, Houston, and Sumter soils.

This soil is used and managed in the same way as Vaiden clay, deep, 2 to 5 percent slopes, eroded. (Capability unit IIIe–6; woodland suitability group 12.)

Vaiden clay, deep, 5 to 8 percent slopes, eroded (VaC2).—The surface layer of this soil ranges from 3 to 5 inches in thickness and, in most places, is dark grayish brown. In many places the surface layer has a yellowish cast because the material from the yellowish-brown subsoil is mixed with it. Shallow gullies occur. Areas mapped may include small areas of Eutaw, Oktibbeha, Sumter, and Houston soils.

This soil is mostly in trees and is best suited to them and to pasture. (Capability unit IVe–5; woodland suitability group 12.)

Vaiden clay, deep, 8 to 12 percent slopes, eroded (VaD2).—The surface layer of this soil is dark yellowish-brown clay 3 to 5 inches thick. In many places it is a mixture of the original, dark grayish-brown surface layer and the yellowish-brown subsoil. Shallow gullies occur. Some areas mapped as this soil include small areas of Eutaw, Oktibbeha, Houston, and Sumter soils.

This soil is best suited to pasture or trees. If it is cultivated, intensive management is needed to control erosion. (Capability unit VIe–6; woodland suitability group 12.)

Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes (VoB).—These soils were mapped together because they are intermingled in such an intricate pattern that it was not practical to map them separately. They occur on the prairie uplands and are moderately well drained or somewhat poorly drained.

The Vaiden soils are dominant in most areas mapped, but some areas consist entirely of Vaiden soils and some entirely of Oktibbeha. Included in some areas mapped as these soils are small areas of Eutaw, Houston, and Sumter soils.

The major horizons of the Vaiden soil are—

0 to 6 inches, very dark grayish brown, very friable silt loam.
6 to 14 inches, yellowish-brown heavy silty clay loam mottled with brownish gray.
14 to 54 inches, mottled gray, yellow, and red clay; firm and plastic.

The surface layer is dark gray to very dark grayish brown. In most places, it is silt loam, but in some small included areas it is a fine sandy loam. The subsoil is pale-olive to yellowish-brown heavy silty clay loam to clay mottled with red and gray at a depth of 12 to 15 inches.

The major horizons of the Oktibbeha soil are—

0 to 8 inches, brown, friable silt loam.
8 to 16 inches, red, firm, plastic clay.
16 to 55 inches, mottled red, gray, and yellow clay; firm and plastic.

The surface layer ranges from very dark gray to brown. The subsoil is yellowish-red to red heavy silty clay loam to clay mottled with gray and yellow at a depth of 10 to 20 inches.

The soils in this undifferentiated unit are underlain by plastic heavy clay parent material at a depth of 5 to 7 feet. They are strongly acid, contain a small amount of organic matter, and are low in natural fertility.

Most of the acreage is covered by a dense growth of trees. (Capability unit IIIe–6; woodland suitability group 12.)

Vaiden and Oktibbeha silt loams, deep, 0 to 2 percent slopes (VoA).—Because these soils are more nearly level than Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes, runoff is slower and areas stay wet for longer periods. In some areas the surface layer is 4 to 6 inches thick. In other included areas are small areas of Eutaw, Houston, and Sumter soils.

Because these soils are wet for longer periods than Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes, cultivation is more difficult. Much of the acreage is still in forest, but a small acreage is used for unimproved pasture. (Capability unit IIIw–4; woodland suitability group 12.)

Vaiden and Oktibbeha silt loams, deep, 5 to 8 percent slopes (VoC).—These sloping soils have faster runoff and lower infiltration than Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes. Consequently, the erosion hazard is greater. Included in some areas mapped as these soils are small areas of Houston and Sumter soils.

The soils in this mapping unit are poorly suited to row crops but are fairly well suited to pasture. Cleared areas are used mainly for pasture, but most areas are still in forest. (Capability unit IVe 5; woodland suitability group 12.)

Vaiden and Oktibbeha silt loams, deep, 8 to 12 percent slopes (VoD).—These sloping soils have faster runoff and slower infiltration than Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes, and are more likely to erode.

Most of the acreage is in trees. Most of the few areas that were cleared, have reverted to native trees or have been planted to pines. A few areas are in unimproved pasture. (Capability unit VIe–6; woodland suitability group 12.)

Wahee Series

The Wahee series consists of nearly level, somewhat poorly drained soils on terraces of the Coastal Plain. These soils formed in material that washed from soils of the surrounding uplands. The surface layer is dark-gray to dark grayish-brown fine sandy loam. The upper subsoil is light brownish gray to yellowish-brown, friable sandy clay loam to clay loam, and the lower subsoil is gray to brownish-gray, firm sandy clay loam to clay.

These soils are strongly acid, contain a small amount of organic matter, and are low in natural fertility. The available water capacity is moderate.

Wahee soils occur with the Flint, Stough, and Leaf soils. They are not so well drained as the Flint soils nor so red in the subsoil. Wahee soils are better drained than the Leaf soils. They have a finer textured subsoil than the Stough soils but do not have a fragipan.

Although Wahee soils are widely distributed throughout the county, the total acreage is small. The native vegetation consists of pines and hardwoods in mixed stands and an understory of dogwood, hawthorn, blueberry, shrubs, vines, and grasses. Most of the acreage is in forest or permanent pasture, for which Wahee soils are best suited.

Wahee fine sandy loam (0 to 2 percent slopes) (Wa).—This somewhat poorly drained soil on terraces has a clay loam to clay subsoil. The major horizons are—

0 to 8 inches, dark grayish-brown to brown, very friable fine sandy loam.
8 to 23 inches, yellowish-brown clay loam with brownish-gray mottles.

23 to 48 inches, light brownish-gray, firm clay mottled with red and brown.

The surface layer ranges from 6 to 10 inches in thickness. The upper subsoil ranges from sandy clay loam to clay loam in texture and from light brownish gray to yellowish brown in color. The lower subsoil is heavy sandy clay loam to clay. Some areas mapped as this soil include a few small areas with slopes of 2 to 5 percent and small areas of Flint, Stough, and Leaf soils.

This soil is strongly acid, contains a small amount of organic matter, and is low in natural fertility. The surface layer generally is in good tilth. The slowly permeable lower subsoil restricts the depth to which roots can grow and limits the moisture available to plants.

This soil responds to fertilization. It is well suited to permanent pasture and pine trees. (Capability unit IIs 2; woodland suitability group 2.)

West Point Series

The West Point series consists of moderately well drained soils in alluvium. These soils derived from alluvium that washed from the prairie uplands. They have a clay surface layer and subsoil. The surface layer is black to very dark gray, and the subsoil is dark gray to very dark gray.

These soils are neutral to moderately alkaline, contain a moderate amount of organic matter, and are moderate in natural fertility. The available water capacity is high.

West Point soils occur with the Houlka soils and are better drained but are not acid. The Houlka soils are slightly acid.

The West Point soils are widely distributed throughout the prairie section of the county. The native vegetation is grass. Most of the acreage is in pasture, for which West Point soils are best suited.

West Point clay (0 to 2 percent slopes) (Wp).—This moderately well drained soil is on prairie bottom lands. The major horizons are—

0 to 6 inches, very dark gray, friable clay.
6 to 18 inches, dark-gray, firm clay.
18 to 38 inches, very dark gray, firm clay with many dark yellowish-brown mottles.

The surface layer ranges from 6 to 12 inches in thickness. The subsoil is very dark gray to gray and is mottled at a depth of 15 to 20 inches. Included in mapping this soil are small areas of Houlka soils.

This soil is neutral to alkaline. Infiltration and permeability are slow to very slow. The available water capacity is high.

This soil is well suited to permanent pasture. (Capability unit IIw–4; woodland suitability group 15.)

Use and Management of the Soils

This section discusses the use and management of soils for crops and pasture, as woodland, for wildlife, and in engineering work.

Crops and Pasture

This subsection consists of four main parts. The first part discusses the general management for crops and pasture. The second part explains the capability grouping of soils that is used by the Soil Conservation Service. In the third part, the soils of the county are placed in capability units, or management groups, and the use and management of each group is discussed. A table in the fourth part lists, for each soil in the county, estimated yields of crops and pasture.

General management for crops and pasture [1]

Yields decrease on soils that are continually used to produce crops and pasture, and unless good management is used to prevent losses of soil and water, production becomes uneconomical. The following paragraphs tell ways to prevent these losses and to keep productivity high.

Cultivated crops.—The soils in Clarke County that are used for crops are generally susceptible to erosion and are low in organic-matter content and in natural fertility. Consequently, practices are needed that control soil losses, add organic matter, and increase fertility.

Erosion can be controlled by keeping close growing crops on the soils as much of the time as is practical. The length of time that cover is needed, in proportion to the length of time that a row crop is grown, depends on the kind of soil, the slope, and the degree of erosion. On sloping soils crops should be planted and cultivated on the contour, and ways should be provided for disposing excess water (fig. 5).

The supply of organic matter can be increased by adding fertilizer and by leaving the crop residue on the soil or mixing it into the surface layer. In addition to increasing organic matter, crusting can be reduced, the water intake increased, and erosion controlled by using crop residue properly, turning under cover crops, and selecting suitable cropping systems that include perennial grasses and legumes.

Because the soils in Clarke County are generally low in natural plant nutrients, additions of fertilizer are needed. The need for fertilizer differs on different soils and for different crops. Soil tests help to determine the correct amount of fertilizer to add, and the Mississippi Agricul-

[1] H. S. Saucier, management agronomist, Soil Conservation Service, assisted in writing this subsection.

Figure 5.—**Waterway protected by grass so that excess water can be disposed of safely.**

tural Experiment Station can recommend the amount of fertilizer needed on a soil by a specified crop.

Pasture.—In addition to protecting the soils against erosion, properly managed pasture provides grazing that brings a good return to the farmer. The practices needed for good management include selection of suitable plants and seeding dates, adequate fertilization and liming, and maintenance of the pasture after the plants have become established.

The soils in Clarke County are suited to many kinds of pasture plants, but individual soils are better suited to some kinds of plants than to others. The plants seeded should be the ones best suited to the particular soil. Perennial grasses that are widely used in the county are bahiagrass, bermudagrass, and dallisgrass for summer grazing, and tall fescue for winter grazing. Legumes used for winter grazing are white clover, crimson clover, and wild winter peas. Annual lespedeza is used for summer grazing. These grasses and legumes should be planted on suitable planting dates and at rates suited to the soil. By adding lime and fertilizer as needed the amount of forage is increased. On many soils a mixture of grasses and legumes provides more nutritious forage than single plants, and better protection of the soil.

Grazing animals should be kept off a newly seeded pasture until it is established. After grazing is started, it should be regulated so that a top growth of 3 to 5 inches is maintained for sod grasses and of 5 to 7 inches for bunch grasses. Weeds can be controlled by clipping and spraying with chemicals. Removing surplus growth of summer grasses in the fall encourages the germination of reseeding legumes.

Capability groups of soils

The capability classification is a grouping of soils that shows, in a general way, how suitable the soils are for most kinds of farming. It is a practical grouping based on limitations of the soil, the risk of damage when they are used, and the way they respond to treatment.

In this system all the kinds of soil are grouped at three levels, the capability class, subclass, and unit. Eight capability classes are in the broadest grouping and are designated by Roman numerals I through VIII. In class I are the soils that have few limitations, the widest range of use, and the least risk of damage when they are used. The soils in the other classes have progressively greater natural limitations. In class VIII are soils and landforms so rough, shallow, or otherwise limited that they do not produce worthwhile yields of crops, forage, or wood products. None of the soils in Clarke County are in this class.

The subclasses indicate major kinds of limitations within the classes. Within most of the classes there can be as many as four subclasses. The subclass is indicated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* means that water in or on the soil interferes with plant growth or cultivation; *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the country, indicates that the chief limitation is climate that is too cold or too drv.

In class I there are no subclasses, because the soils of this class have few or no limitations. Class V can contain, at the most, only subclasses *w*, *s*, and *c*, because the soils in it have little or no erosion hazard but have other limitations that limit their use largely to pasture, range, woodland, or wildlife.

Within the subclasses are the capability units, which are groups of soils enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about managment of soils. Capability units are generally identified by numbers assigned locally, for example IIe–1 or IIIe–2.

Soils are classified in capability classes, subclasses, and units in accordance with the degree and kind of their permanent limitations. Not considered in this classification is major and generally expensive landforming that would change the slope, depth, or other characteristics of the soil, and not considered are possible but unlikely major projects of reclamation.

The eight classes in the capability system, and the subclasses and units in this county, are described in the list that follows.

Class I.—Soils that have few limitations that restrict their use. (No subclasses.)
- Capability unit I–1.—Well-drained, nearly level, acid soils on uplands and terraces.

Class II.—Soils that have some limitations that reduce the choice of plants or require moderate conservation practices.

Subclass IIe.—Soils subject to moderate erosion if they are not protected.
- Capability unit IIe–1.—Well-drained, gently sloping, acid soils on uplands and terraces.
- Capability unit IIe–2.—Moderately well drained, gently sloping, acid soils that have a sandy clay loam to clay subsoil and are on uplands and terraces.
- Capability unit IIe–3.—Moderately well drained, gently sloping, acid soils that have a fragipan and are on uplands and terraces.
- Capability unit IIe–4.—Moderately well drained, gently sloping, neutral to alkaline soils on uplands.

Subclass IIw.—Soils that have moderate limitations because of excess water.
- Capability unit IIw–1.—Moderately well drained, acid soils that are on bottom lands and are subject to flooding that moderately damages crops.
- Capability unit IIw–2.—Moderately well drained, nearly level, acid soils that have a fragipan and are on uplands and terraces.
- Capability unit IIw–3.—Somewhat poorly drained, acid soils that are on bottom lands and are subject to flooding that slightly or moderately damages crops.
- Capability unit IIw–4.—Moderately well drained, neutral to moderately alkaline clays that are on bottom lands and are subject to flooding that slightly damages crops.

Subclass IIs.—Soils that have moderate limitations of moisture capacity or tilth.
Capability unit IIs–1.—Moderately well drained, nearly level, acid soils that have a heavy loam to clay subsoil and are on uplands and terraces.
Capability unit IIs–2.—Somewhat poorly drained and moderately well drained, nearly level, acid soils that have a clay loam to clay subsoil and are on uplands and terraces.
Capability unit IIs–3.—Moderately well drained, nearly level, neutral to alkaline clays on uplands.

Class III.—Soils that have severe limitations that reduce the choice of plants or require special conservation practices, or both.
Subclass IIIe.—Soils subject to severe erosion if they are cultivated and not protected.
Capability unit IIIe–1.—Well-drained, sloping, acid soils on uplands.
Capability unit IIIe–2.—Moderately well drained, sloping, acid soils that have a sandy clay loam to clay subsoil and are on uplands.
Capability unit IIIe–3.—Moderately well drained, sloping, acid soils that have a fragipan and are on uplands and terraces.
Capability unit IIIe–4.—Somewhat poorly drained and moderately well drained, gently sloping, acid soils that have a sandy clay loam to clay subsoil and are on uplands.
Capability unit IIIe–5.—Moderately well drained, gently sloping and sloping, neutral to alkaline soils that overlie chalk and marl on uplands.
Capability unit IIIe–6.—Somewhat poorly drained, gently sloping, acid soils that have a mottled clay subsoil and are on uplands.
Subclass IIIw.—Soils that have severe limitations because of excess water.
Capability unit IIIw–1.—Somewhat poorly drained, nearly level and gently sloping, acid soils on uplands and terraces.
Capability unit IIIw–2.—Somewhat excessively drained, acid soils on the flood plain.
Capability unit IIIw–3.—Poorly drained, acid clays on the flood plain.
Capability unit IIIw–4.—Somewhat poorly drained, nearly level, acid soils that have a heavy clay subsoil and are on uplands.
Subclass IIIs.—Soils that have severe limitations of moisture capacity and tilth.
Capability unit IIIs–1.—Well-drained and somewhat excessively drained, nearly level and gently sloping, acid soils that have a very sandy subsoil and are on uplands and terraces.

Class IV.—Soils that have very severe limitations that restrict the choice of plants, require very careful management, or both.
Subclass IVe.—Soils subject to very severe erosion if they are cultivated and not protected.
Capability unit IVe–1.—Well-drained, sloping and strongly sloping, acid soils on uplands and terraces.
Capability unit IVe–2.—Moderately well drained, sloping and strongly sloping, acid soils that have a sandy clay loam to clay subsoil and are on uplands.
Capability unit IVe–3.—Moderately well drained, strongly sloping, acid soils that have a fragipan and are on uplands.
Capability unit IVe–4.—Somewhat poorly drained and moderately well drained, sloping, acid soils that have a sandy clay loam to clay subsoil and are on uplands.
Capability unit IVe–5.—Somewhat poorly drained, sloping, acid soils that have a heavy clay subsoil and are on uplands.
Subclass IVw.—Soils that have very severe limitations for cultivation because of excess water.
Capability unit IVw–1.—Poorly drained soils on bottom lands that are likely to be flooded.
Capability unit IVw–2.—Poorly drained, nearly level, acid soils on uplands and terraces.
Capability unit IVw–3.—Poorly drained, nearly level, acid clays on uplands.
Subclass IVs.—Soils that have very severe limitations of stoniness, low moisture capacity, or other soil features.
Capability unit IVs–1.—Excessively drained, sloping soils that have a very sandy subsoil and are on uplands.
Capability unit IVs–2.—Well-drained to excessively drained, sloping, acid soils that overlie sandstone.

Class V.—Soils not likely to erode that have other limitations, impractical to remove without major reclamation, that limit their use largely to pasture, woodland, or wildlife.
Subclass Vw.—Soils too wet for cultivation; drainage or protection not feasible.
Capability unit Vw–1.—Frequently flooded loamy sands and sands that were recently deposited on the flood plain.

Class VI.—Soils that have severe limitations that make them generally unsuitable for cultivation and that limit their use largely to pasture, woodland, or wildlife food and cover.
Subclass VIe.—Soils severely limited, chiefly by risk of erosion if protective cover is not maintained.
Capability unit VIe–1.—Well-drained, strongly sloping, acid soils on uplands.
Capability unit VIe–2.—Moderately well drained, strongly sloping, acid soils that have a clay loam to clay subsoil and are on uplands.
Capability unit VIe–3.—Moderately well drained, sloping and strongly sloping, acid soils that have a mottled clay subsoil and are on uplands.
Capability unit VIe–4.—Somewhat poorly drained and moderately well drained, sloping, acid soils that have a heavy sandy clay loam or clay subsoil and are on uplands.
Capability unit VIe–5.—Moderately well drained, sloping and strongly sloping, neutral to alkaline clays on uplands.
Capability unit VIe–6.—Somewhat poorly drained, strongly sloping, acid soils on prairie uplands.

Subclass VIs. Soils generally unsuitable for cultivation and limited for other uses by their moisture capacity, stones, or other features.

Capability unit VIs–1.—Excessively drained, strongly sloping, acid soils on uplands.

Capability unit VIs–2.—Excessively drained to moderately well drained, sloping soils that overlie heavy clay or sandstone on uplands.

Class VII.—Soils that have very severe limitations that make them unsuitable for cultivation without major reclamation, and that restrict their use largely to grazing, woodland, or wildlife.

Subclass VIIe.—Soils very severely limited, chiefly by risk of erosion if protective cover is not maintained.

Capability unit VIIe 1. Well-drained, strongly sloping and steep, acid soils on uplands.

Capability unit VIIe–2.—Somewhat poorly drained and moderately well drained, strongly sloping, acid soils that have a heavy sandy clay loam to clay subsoil and are on uplands.

Capability unit VIIe–3.—Soils ranging from sand to clay that have been eroded into an intricate pattern of gullies.

Subclass VIIs.—Soils very severely limited by moisture capacity, stones, or other soil features.

Capability unit VIIs–1.—Excessively drained, strongly sloping and steep soils that have a very sandy subsoil and are on uplands.

Capability unit VIIs–2.—Well-drained to excessively drained, strongly sloping to steep, acid soils that overlie sandstone on uplands.

Capability unit VIIs–3.—Moderately well drained to excessively drained, strongly sloping to steep, acid soils that have a sand to clay subsoil and occur on uplands.

Class VIII. Soils and landforms that have limitations precluding their use, without major reclamation, for commercial production of plants; and that restrict their use to recreation, wildlife, water supply, or esthetic purposes. (No soils in Clarke County are in class VIII.)

Capability units in Clarke County

In the following pages each capability unit in Clarke County is described, the soils in each unit are listed, and suggestions for use and management are given. Specific amounts of lime and fertilizer are not suggested for the soils in a unit, because the needs of the soils vary according to past cropping and management. Additions of lime and fertilizer should be based on the results of soil tests and recommendations of the Mississippi Agricultural Experiment Station.

CAPABILITY UNIT I–1

Capability unit I–1 consists of well-drained, nearly level, acid soils on uplands and terraces. The surface layer is very friable, grayish-brown to dark-brown fine sandy loam 6 to 12 inches thick. The subsoil is friable, yellowish-red to red heavy sandy loam, sandy clay loam, or clay loam over loamy sand or sandy loam. These soils are moderate in infiltration, permeability, and available water capacity, but they are low in natural fertility. They have a thick root zone. The soils are—

Cahaba fine sandy loam, 0 to 2 percent slopes.
Ruston fine sandy loam, 0 to 2 percent slopes.

These soils amount to less than 1 percent of the county. About half of their acreage is cultivated or pastured, and the rest is wooded.

These soils are suited to row crops, pasture, and trees. Suitable crops are cotton, corn, soybeans, and small grain. Bermudagrass, tall fescue, dallisgrass, johnsongrass, bahiagrass, sudangrass, and millet are suitable grasses, and wild winter peas, vetch, lespedeza, and crimson clover are suitable legumes. Also suitable are truck crops and peaches. Shortleaf and loblolly pines grow well.

If these soils are managed well, they can be cultivated continuously to clean-tilled crops. In a suitable cropping system, corn is followed by a cover crop. All residue from the corn is used to protect and improve the soils.

If yields of row crops and permanent pasture are to be high, additions of a complete fertilizer and of lime are needed. Good tilth is easy to maintain, but in some places graded crop rows are needed to remove excess water.

CAPABILITY UNIT IIe–1

Capability unit IIe–1 consists of well-drained, gently sloping, acid soils on uplands and terraces. The surface layer is very friable, grayish-brown to dark-brown fine sandy loam 4 to 12 inches thick. The subsoil is friable, yellowish-red to red heavy sandy loam, sandy clay loam, or clay loam over loamy sand or sandy loam. These soils are moderate in infiltration, permeability, and available water capacity, but they are low in natural fertility. They have a thick root zone. The soils are—

Cahaba fine sandy loam, 2 to 5 percent slopes.
Cahaba fine sandy loam, 2 to 5 percent slopes, eroded.
Ruston fine sandy loam, 2 to 5 percent slopes.
Ruston fine sandy loam, 2 to 5 percent slopes, eroded.

These soils occupy about 3 percent of the county. Most of their acreage is cultivated and pastured, but a fairly large acreage remains wooded.

These soils are well suited to row crops, pasture, and trees. Cotton, corn, soybeans, grain sorghum, and small grain are suitable crops. Truck crops grow well under good management. Suitable grasses are bermudagrass, tall fescue, dallisgrass, johnsongrass, bahiagrass, sudangrass, and millet, and suitable legumes are wild winter peas, vetch, lespedeza, and crimson clover. Also suitable are peaches. Shortleaf and loblolly pines grow well.

Good management is needed if clean-tilled crops are grown continuously. Corn or cotton can be grown each year, if the crop residue is returned to the soil and a cover crop is seeded. Also, corn or cotton can be grown for 2 years if it is preceded by 2 years of lespedeza. Crop residue that is shredded and left on the surface as a mulch helps to increase infiltration and to slow runoff.

Complete fertilizer and lime are needed on these soils if yields are to remain high. Good tilth is easy to maintain, though erosion is the main hazard. Contour cultivation, sodded waterways, and terraces are effective in controlling runoff and the loss of soil.

CAPABILITY UNIT IIe–2

Capability unit IIe–2 consists of moderately well drained, gently sloping, acid soils on uplands and terraces. The surface layer is very friable, dark-gray fine sandy loam 4 to 12 inches thick. The subsoil is friable,

yellowish-red to red heavy sandy clay loam to clay that is mottled below a depth of about 20 inches. These soils are moderate in infiltration and available water capacity, but they are slow in permeability and low in natural fertility. The soils are—

Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes.
Shubuta fine sandy loam, 2 to 5 percent slopes.
Shubuta fine sandy loam, 2 to 5 percent slopes, eroded.

These soils occupy about 1 percent of the county. Most of their acreage is cultivated and pastured, but some fairly large areas are wooded.

These soils are suited to row crops, pasture, and trees. Suitable crops are cotton, corn, soybeans, grain sorghum, small grain, and truck crops. Bermudagrass, tall fescue, dallisgrass, and johnsongrass are suitable grasses, and vetch, wild winter peas, annual and sericea lespedezas, and white clover are suitable legumes. Pine trees grow well.

If these soils are managed well, they can be used for clean-tilled crops about half the time and for close-growing or soil-improving crops the other half. Row crops can be grown for 2 years if they are preceded by lespedeza grown for 2 years. Crop residue that is shredded and left on the surface as a mulch helps to increase infiltration and to slow runoff. Also suitable on these soils is 4 years of a sod crop or sericea lespedeza followed by 2 years of row crops. In this system cover crops and crop residue are used to protect and improve the soil.

Complete fertilizer and lime are needed on these soils if yields are to remain high. Good tilth is easy to maintain, but the erosion hazard is moderate in cultivated fields. Contour cultivation, sodded waterways, and terraces are effective in controlling runoff and the loss of soil.

CAPABILITY UNIT IIe–3

Capability unit IIe–3 consists of moderately well drained, gently sloping, acid soils on uplands and terraces. The surface layer is dark-gray to brown, friable fine sandy loam 4 to 12 inches thick. The subsoil is friable, yellowish-brown to yellowish-red sandy clay loam to loam. A mottled loam or sandy loam fragipan occurs at a depth of about 24 inches. Infiltration is slow. Permeability is moderate above the pan and is slow in it. The available water capacity is moderate, and natural fertility is low. The soils are—

Ora fine sandy loam, 2 to 5 percent slopes.
Ora fine sandy loam, 2 to 5 percent slopes, eroded.
Prentiss fine sandy loam, 2 to 5 percent slopes.
Savannah fine sandy loam, 2 to 5 percent slopes.
Savannah fine sandy loam, 2 to 5 percent slopes, eroded.
Tilden fine sandy loam, 2 to 5 precent slopes.
Tilden fine sandy loam, 2 to 5 percent slopes, eroded.

These soils occupy about 3.5 percent of the county. About half of their acreage is used for pasture, and the other half is in forest.

The soils of this unit are suited to row crops, pasture, and trees. Cotton, corn, soybeans, grain sorghum, and small grain are suitable crops. Truck crops grow well under good management. Suitable grasses are bermudagrass, tall fescue, dallisgrass, bahiagrass, and sudangrass, and suitable legumes are wild winter peas, vetch, annual and sericea lespedezas, and white clover. Also suitable are shortleaf and loblolly pines.

If these soils are managed well, they can be used for close-growing crops about half the time and for row crops the other half. In this system, cover crops are grown, and all crop residue is used to protect and improve the soils. In another suitable cropping system the clean-tilled crop is grown for a shorter time than the close-growing or soil-improving crop. An example is a sod crop or sericea lespedeza grown for 4 years and followed by a row crop grown for 2 years. All crop residue is returned to the soil.

Complete fertilizer and lime are needed on these soils if yields are to remain high. Good tilth is easy to maintain, but there is a moderate hazard of erosion. Contour tillage, terraces, and sodded waterways are effective in controlling runoff and soil losses.

CAPABILITY UNIT IIe–4

Capability unit IIe–4 consists of moderately well drained, gently sloping, neutral to alkaline soils on uplands. The surface layer is friable, black to dark grayish-brown, granular clay, and the subsoil is firm, alkaline clay that is mottled and increasingly grayer in its lower parts. Infiltration and permeability are slow. The available water capacity is high, and natural fertility is moderate. The soils are—

Houston clay, 2 to 5 percent slopes.
Sumter clay, 2 to 5 percent slopes, eroded.

These soils occupy less than 1 percent of the county. Most of their acreage is in pasture.

The soils of this unit are well suited to the crops and pasture plants that are commonly grown in the county. Suitable crops are cotton, soybeans, grain sorghum, and small grain. Bermudagrass, tall fescue, dallisgrass, johnsongrass, and bahiagrass are suitable grasses, and wild winter peas, black medic, sweetclover, and white clover are suitable legumes. The Sumter soil is poorly suited to corn, and the Houston soil is fairly well suited.

Good management is needed if clean-tilled crops are grown continuously. Row crops can be grown each year if crop residue is returned to the soil and cover crops are seeded. Also suitable is a cropping system in which oats and lespedeza are grown for 2 years and are followed by 2 years of row crops.

If yields are to remain high, additions of phosphate are needed for row crops and pasture and nitrogen is needed for nonlegumes. Runoff and erosion can be controlled by installing a complete water-disposal system that provides terraces and waterways and crop rows arranged on the contour.

CAPABILITY UNIT IIw–1

Capability unit IIw–1 consists of moderately well drained, acid, alluvial soils on bottom lands. These soils are subject to flooding that moderately damages crops. The surface layer is very friable, brown sandy loam, and the subsoil is yellowish-brown fine sandy loam that is mottled with gray below a depth of about 18 inches. These soils are moderate in infiltration, permeability, and available water capacity. The natural fertility is generally low. The soils are—

Iuka fine sandy loam.
Iuka soils, local alluvium.

These soils occupy about 1 percent of the county. Most of their acreage is in forest.

The soils of this unit are well suited to row crops, pasture, and trees. Cotton, corn, soybeans, grain sorghum,

and small grain are suitable crops. Suitable grasses are bermudagrass, tall fescue, dallisgrass, bahiagrass, and sudangrass, and suitable legumes are wild winter peas, vetch, annual lespedeza, and white clover. Pine trees and suitable hardwoods grow well.

These soils can be planted to clean-tilled crops each year if crop residue is shredded and left on the surface to help increase infiltration and to reduce crusting. Also suitable is a cropping system in which small grain and lespedeza are grown for 2 years and are followed by 2 years of row crops.

If these soils are adequately drained and fertilized, they produce good yields. Excess water can be disposed of rapidly through V- and W-ditches and field laterals.

CAPABILITY UNIT IIw-2

Capability unit IIw 2 consists of moderately well drained, nearly level, acid soils on uplands and terraces. The surface layer is very friable, dark-gray to brown fine sandy loam 6 to 12 inches thick, and the subsoil is yellowish-brown to yellowish-red sandy clay loam to loam. A mottled loam or sandy loam fragipan occurs at a depth of about 24 inches. Infiltration is slow. Permeability is moderate above the fragipan and is slow in it. The available water capacity is moderate, and natural fertility is low. The soils are—

Ora fine sandy loam, 0 to 2 percent slopes.
Prentiss fine sandy loam, 0 to 2 percent slopes.
Savannah fine sandy loam, 0 to 2 percent slopes.
Tilden fine sandy loam, 0 to 2 percent slopes.

These soils occupy about 2 percent of the county. Most of their acreage is in pasture; the rest is in row crops and forest.

The soils of this unit are suited to row crops, pasture, and trees. Suitable crops are cotton, corn, soybeans, grain sorghum, and small grain. Bermudagrass, tall fescue, dallisgrass, bahiagrass, and sudangrass are suitable grasses, and wild winter peas, vetch, annual and sericea lespedezas, and white clover are suitable legumes. Pine trees grow well.

Good management is needed if clean-tilled crops are grown on these soils continuously. Row crops can be grown each year if crop residue is shredded and left on the surface as a mulch to help increase infiltration and to reduce crusting and packing. Also suitable is a cropping system in which small grain and lespedeza are grown for 2 years and are followed by 2 years of row crops.

A complete fertilizer and lime are needed on these soils if yields are to remain high. Good tilth is easy to maintain. Excess surface water can be disposed of with graded rows and V- and W-ditches.

CAPABILITY UNIT IIw-3

Capability unit IIw–3 consists of somewhat poorly drained, acid, alluvial soils on bottom lands. These soils are subject to flooding that slightly or moderately damages crops. The surface layer is pale-brown, very friable sandy loam to loam. The subsoil is brown sandy loam that is mottled with gray below a depth of 6 inches. Infiltration, permeability, and available water capacity are moderate, and natural fertility is generally low. The soils are—

Mantachie fine sandy loam
Mantachie soils, local alluvium.

These soils occupy about 2.5 percent of the county. About 10 percent of their acreage is cultivated, 15 percent is pastured, and 75 percent is wooded.

The soils of this unit are suited to row crops, pasture, and trees. Corn, soybeans, and grain sorghum are suitable crops. Suitable grasses are bermudagrass, tall fescue, dallisgrass, and bahiagrass, and suitable legumes are wild winter peas, annual lespedeza, and white clover. Pine trees and suitable hardwoods grow well.

Under good management, these soils can be cultivated continuously to clean-tilled crops. Corn is suitable, if cover crops are seeded and good use is made of crop residue. Also suitable is lespedeza grown for 2 years and followed by 1 year of corn or another row crop.

Because surface water is a problem in some cultivated areas, a complete system for disposing of water is needed. An effective system is one that provides graded rows, V- and W-ditches, and field laterals (fig. 6). In some areas diversions are needed to carry away water from adjacent hillsides.

Lime and a complete fertilizer are needed if yields of row crops are to remain high.

CAPABILITY UNIT IIw-4

West Point clay, the only soil in capability unit IIw–4, is on the prairie bottom land and is alluvial, moderately well drained, and neutral to moderately alkaline. It is subject to flooding that slightly damages crops. The soil consists of dark-gray clay throughout its profile. It is slow in infiltration and permeability and high in available water capacity. Natural fertility is moderate.

This soil occupies less than 1 percent of the county. Most of its acreage is in pasture.

This soil is well suited to row crops, pasture, and trees. Suitable crops are cotton, corn, soybeans, grain sorghum, and small grain. Bermudagrass, tall fescue, dallisgrass, johnsongrass, and bahiagrass are suitable grasses, and wild winter peas, annual and sericea lespedezas, white clover, and sweetclover are suitable legumes.

If this soil is managed well, it can be cultivated to clean-tilled crops continuously. A row crop can be grown each year if good use is made of the crop residue. Crop residue

Figure 6.—**Drainage ditch on Mantachie fine sandy loam.**

that remains on the surface when this soil is not cultivated helps to increase infiltration.

In most places additions of phosphate and potash are needed if yields of row crops and pasture are to remain high. For nonlegumes nitrogen is also needed. The excess surface water can be drained rapidly by V- and W-ditches and field laterals. Diversions are needed in some areas to carry away water that runs in from adjacent hillsides.

CAPABILITY UNIT IIs–1

Flint fine sandy loam, loamy substratum, 0 to 2 percent slopes, is the only soil in capability unit IIs–1. This moderately well drained, acid soil is on uplands and terraces. The surface layer is dark-gray, very friable fine sandy loam 6 to 12 inches thick. The subsoil is yellowish-red to red heavy loam to clay that is mottled below a depth of about 20 inches. Infiltration and permeability are slow. The available water capacity is moderate, and natural fertility is low.

This soil occupies less than 1 percent of the county. Most of its acreage is wooded, but small areas are cleared and are used for pasture and crops.

This soil is suited to pasture, row crops, and trees. Cotton, corn, soybeans, grain sorghum, and small grain are suitable crops. Suitable grasses are bermudagrass, tall fescue, dallisgrass, johnsongrass, and bahiagrass. Suitable legumes are vetch, wild winter peas, annual and sericea lespedezas, and white clover. Shortleaf and loblolly pines grow well.

A row crop can be grown each year if management is good and a cover crop is seeded. Crop residue that is shredded and left on the surface as a mulch helps to increase infiltration and to reduce crusting and packing. In another cropping system, clean-tilled crops and close-growing crops or soil-improving crops are grown in about equal amounts. An example is 2 years of small grain and lespedeza and 2 years of row crops and cover crops.

Lime and a complete fertilizer are needed on this soil if yields are to remain high. The use of graded rows, V- and W-ditches, and field laterals hastens the drainage of excess water from cultivated areas.

CAPABILITY UNIT IIs–2

Capability unit IIs 2 consists of somewhat poorly drained and moderately well drained, nearly level, acid soils on uplands and terraces. The surface layer is very friable, dark grayish-brown to brown very fine sandy loam or fine sandy loam 6 to 12 inches thick. The subsoil is mottled yellowish-brown and gray clay loam to clay. Infiltration and permeability are slow. The available water capacity is moderate, and natural fertility is low. The soils are—

Angie fine sandy loam, 0 to 2 percent slopes.
Wahee fine sandy loam.

These soils occupy less than 1 percent of the county. Most of their acreage is wooded, but some areas are cleared and used mostly for pasture.

The soils of this unit are suited to row crops, pasture, and trees. Cotton is a suitable crop. Suitable grasses are bermudagrass, dallisgrass, and bahiagrass. Annual and sericea lespedezas and white clover are suitable legumes. Pine trees grow well.

Row crops can be grown each year if these soils are managed well and good use is made of crop residue. If the crop residue is shredded and left on the surface as a mulch, it helps to increase infiltration and to reduce crusting and packing. Another suitable cropping system is lespedeza grown for 2 years and followed by 2 years of row crops.

Additions of lime and a complete fertilizer are needed if yields of row crops and pasture are to remain high. Good tilth is easy to maintain, but surface drainage is a problem in some cultivated fields. The use of graded rows, V- and W-ditches, and field laterals hastens the removal of excess surface water.

CAPABILITY UNIT IIs–3

Houston clay, 0 to 2 percent slopes, is the only soil in capability unit IIs–3. This moderately well drained, neutral to alkaline soil is on prairie uplands. The surface layer is friable, granular, black clay, and the subsoil is very dark gray clay. Infiltration and permeability are slow. The available water capacity is high, and natural fertility is moderate.

This soil occupies less than 1 percent of the county. Most of its acreage is in pasture.

This soil is well suited to row crops and pasture. Suitable crops are cotton, corn, soybeans, grain sorghum, and small grain. Bermudagrass, tall fescue, dallisgrass, johnsongrass, and bahiagrass are suitable grasses, and wild winter peas, alfalfa, sweetclover, and white clover are suitable legumes.

Row crops can be grown on this soil each year if management is good, cover crops are seeded, and good use is made of crop residue. Also suitable are clean-tilled crops and close-growing or soil-improving crops in equal amounts. An example is 2 years of oats and lespedeza followed by 2 years of row crops.

Additions of phosphate and potash are needed on this soil for all crops, and nitrogen is needed for nonlegumes. The use of V- and W-ditches, field laterals, and graded rows hastens the drainage of surface water.

CAPABILITY UNIT IIIe–1

Capability unit IIIe–1 consists of well-drained, sloping, acid soils of the uplands. The surface layer is very friable, brown to grayish-brown fine sandy loam 4 to 12 inches thick. The subsoil is yellowish-red to red heavy sandy loam, sandy clay loam, or clay loam over loamy sand or sandy loam. Infiltration, permeability, and available water capacity are moderate. The natural fertility is low. These soils have a thick root zone. They are—

Orangeburg fine sandy loam, 5 to 8 percent slopes.
Orangeburg fine sandy loam, 5 to 8 percent slopes, eroded.
Ruston fine sandy loam, 5 to 8 percent slopes.
Ruston fine sandy loam, 5 to 8 percent slopes, eroded.

These soils account for about 6 percent of the county. Most of their acreage is in forest, but a small part is in row crops and pasture.

The soils in this unit are suited to row crops, pasture, and trees. Suitable crops that are commonly grown are cotton, corn, soybeans, grain sorghum, and small grain. Truck crops grow well under good management. Bermudagrass, tall fescue, dallisgrass, johnsongrass, bahiagrass, sudangrass, and millet are suitable grasses, and

wild winter peas, vetch, sericea lespedeza, and crimson clover are suitable legumes. Also suitable are peach trees, loblolly pine, and shortleaf pine.

If these soils are managed well, clean-tilled crops and close-growing or soil-improving crops can be grown in about equal amounts. By shredding crop residue and leaving it on the surface, infiltration is increased and runoff is slowed. A suitable cropping system is 2 years of pasture or sericea lespedeza grown for hay and 2 years of row crops followed by a cover crop. In another suitable cropping system, close-growing or soil-improving crops are grown longer than clean-tilled crops, crop residue is used, and fertilizer is added. An example is 4 years of pasture or sericea lespedeza grown for hay and 2 years of row crops followed by a cover crop.

Additions of lime and a complete fertilizer are needed on these soils if yields are to remain high. Good tilth is easy to maintain, but there is a moderate hazard of erosion. Contour cultivation and sodded waterways are effective in controlling erosion, and on long slopes terraces are needed.

CAPABILITY UNIT IIIe–2

Capability unit IIIe 2 consists of moderately well drained, sloping, acid soils on uplands. These soils are susceptible to erosion. The surface layer is very friable, dark-gray fine sandy loam 4 to 12 inches thick. The subsoil is yellowish-red to red heavy sandy clay loam to clay that is mottled below a depth of about 20 inches. Infiltration and permeability are slow. The available water capacity is moderate, and natural fertility is low. The soils are—

Shubuta fine sandy loam, 5 to 8 percent slopes.
Shubuta fine sandy loam, 5 to 8 percent slopes, eroded.

These soils occupy about 2 percent of the county. About 10 percent of their acreage is cultivated, 15 percent is pastured, and 75 percent is wooded.

The soils in this unit are suited to pasture, row crops, and trees. Cotton, corn, soybeans, grain sorghum, small grain, and truck crops are suitable. Suitable grasses are bermudagrass, tall fescue, dallisgrass, johnsongrass, and bahiagrass, and suitable legumes are vetch, wild winter peas, annual and sericea lespedezas, and white clover. Shortleaf and loblolly pines grow well.

Permanent pasture and trees help to control erosion and are well suited to these soils, but row crops can be grown in a suitable cropping system that provides a close-growing crop two-thirds of the time. One such system is 4 years of a sod crop or sericea lespedeza and 2 years of a row crop and a cover crop.

Additions of lime and a complete fertilizer are needed if yields of row crops and pasture are to remain high. Good tilth is easily maintained. Contour tillage, sodded waterways, and terraces are effective in controlling runoff and erosion.

CAPABILITY UNIT IIIe–3

Capability unit IIIe–3 consists of moderately well drained, sloping, acid soils on uplands and terraces. These soils are susceptible to erosion and are dry in summer. The surface layer is dark-gray to brown, very friable fine sandy loam 4 to 12 inches thick. The subsoil is yellow to yellowish-red sandy loam to clay loam. A mottled loam or sandy loam fragipan occurs at a depth of about 24 inches. Infiltration is slow. Permeability is moderate above the pan and is slow in it. The available water capacity is moderate, and natural fertility is low. The soils are—

Ora fine sandy loam, 5 to 8 percent slopes.
Ora fine sandy loam, 5 to 8 percent slopes, eroded.
Savannah fine sandy loam, 5 to 8 percent slopes, eroded.
Tilden fine sandy loam, 5 to 8 percent slopes, eroded.

These soils occupy about 1.5 percent of the county. Most of their acreage is in row crops and pasture.

The soils of this unit are suited to row crops, pasture, and trees. Suitable crops are cotton, corn, soybeans, grain sorghum, small grain, and truck crops. Bermudagrass, tall fescue, dallisgrass, bahiagrass, and sudangrass are suitable grasses, and wild winter peas, vetch, annual and sericea lespedezas, and white clover are suitable legumes. Shortleaf and loblolly pines grow well.

The hazards of erosion and drought in summer can be lessened by using a suitable cropping system and water-control measures that are designed to reduce and slow down runoff. Close-growing crops are needed on these soils about half of the time. A suitable cropping system consists of 2 years of row crops followed by 2 years of small grain and lespedeza. Another suitable system is 4 years of sod crops and 2 years of row crops. In cultivated areas, contour cultivation and sodded waterways are effective in controlling runoff. On long slopes terraces help to control soil losses. Additions of lime and fertilizer are needed if yields are to be high.

CAPABILITY UNIT IIIe–4

Capability unit IIIe 4 consists of somewhat poorly drained and moderately well drained, gently sloping, acid soils on uplands. These soils are slightly susceptible to erosion. The surface layer is very friable, dark grayish-brown to brown fine sandy loam or loam 4 to 14 inches thick. The subsoil varies in color and texture. Infiltration and permeability are slow. Available water capacity is moderate, and natural fertility is low. The soils are—

Angie fine sandy loam, 2 to 5 percent slopes.
Boswell fine sandy loam, 2 to 5 percent slopes.
Boswell fine sandy loam, 2 to 5 percent slopes, eroded.

The upper subsoil of the Angie soil is yellow to yellowish-brown heavy sandy clay loam to clay, and the lower subsoil is mottled gray and brownish-yellow clay loam to clay. The subsoil of the Boswell soils is red clay that is mottled with gray below a depth of about 16 inches.

The soils of this unit occupy about 1 percent of the county. Most of their acreage is in forest; only a small acreage is cultivated.

These soils are suited to row crops, pasture, and trees. Cotton is a suitable crop. Suitable grasses are bermudagrass, dallisgrass, bahiagrass, and sudangrass, and suitable legumes are annual and sericea lespedezas and white clover. Pine trees grow well.

The hazards of erosion and of excess water in winter can be lessened by a suitable cropping system and water-control measures that are designed to reduce and slow down runoff. Close-growing crops should be grown two-thirds of the time. A suitable cropping system is 2 years of row crops followed by 4 years of sericea lespedeza or sod crops. Contour tillage and sodded waterways are effective in controlling runoff. On long, smooth slopes, terraces help to reduce soil losses.

Additions of lime and a complete fertilizer are needed if yields of row crops are to be fair to high. These amendments insure good yields of pasture and hay.

CAPABILITY UNIT IIIe–5

Capability unit IIIe–5 consists of moderately well drained, gently sloping and sloping, neutral to alkaline soils on prairie uplands. These soils are moderately susceptible to erosion. The surface layer is friable, granular clay that is 2 to 4 inches thick and consists of a mixture of the original surface soil and the subsoil. It is wet and sticky in winter. The subsoil is clay that is underlain by weathered chalk at a depth of about 20 inches. Infiltration and permeability are slow. The available water capacity is high, and natural fertility is moderate. The soils are—

Sumter clay, 2 to 5 percent slopes, severely eroded.
Sumter clay, 5 to 8 percent slopes, eroded.

These soils occupy less than 1 percent of the county. Most of their acreage is in pasture.

The soils of this unit are well suited to row crops and pasture. Suitable crops are cotton, soybeans, grain sorghum, and small grain. Bermudagrass, tall fescue, dallisgrass, johnsongrass, and bahiagrass are suitable grasses, and wild winter peas, alfalfa, sweetclover, and white clover are suitable legumes.

Practices are required to reduce the erosion hazard, the excess water in winter, and the stickiness of the surface layer. Erosion can be lessened by using a suitable cropping system and water-control measures that are designed to reduce and slow down runoff. A suitable cropping system that keeps these soils in close-growing crops half of the time consists of 2 years of row crops followed by 2 years of a small grain and lespedeza. In cultivated areas contour tillage and sodded waterways are effective in controlling soil losses.

Additions of phosphate and potash are needed if yields of row crops and pasture are to remain high. Nitrogen is needed for all nonlegumes.

CAPABILITY UNIT IIIe–6

Capability unit IIIe–6 consists of somewhat poorly drained, gently sloping, acid soils on prairie uplands. These soils are moderately susceptible to erosion and are wet in winter. The surface layer is friable, dark reddish-brown silt loam or clay 4 to 10 inches thick. The subsoil is mottled clay. Infiltration and permeability are slow. The available water capacity is high, and natural fertility is moderate to low. The soils are—

Vaiden clay, deep, 2 to 5 percent slopes.
Vaiden clay, deep, 2 to 5 percent slopes, eroded.
Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes.

These soils occupy about 2 percent of the county. Most of their acreage is in woods.

The soils of this unit are well suited to row crops, pasture, and trees. Soybeans, grain sorghum, and small grain are suitable crops. Suitable grasses are bermudagrass, dallisgrass, johnsongrass, and bahiagrass, and suitable legumes are wild winter peas, vetch, and annual and sericea lespedezas. Loblolly and shortleaf pines grow well.

Practices are required to reduce the erosion hazard and the excess water in winter. A suitable cropping system that keeps these soils in close-growing crops about half of the time consists of 2 years of row crops followed by 2 years of small grain and lespedeza. In cultivated areas contour tillage and sodded waterways are effective in controlling runoff. Terraces help to control soil losses on the longer slopes.

Additions of lime and a complete fertilizer are needed if yields of row crops and pasture are to remain high.

CAPABILITY UNIT IIIw–1

Capability unit IIIw–1 consists of somewhat poorly drained, nearly level and gently sloping, acid soils on uplands and terraces. These soils have a mottled, friable sandy clay loam or loam fragipan at a depth of about 18 inches. The surface layer is a very friable fine sandy loam 6 to 10 inches thick. The subsoil is mottled grayish-brown to yellow, friable fine sandy loam to sandy clay loam. Infiltration is slow. Permeability is moderate above the fragipan and very slow in it. The available water capacity is moderate to low, and natural fertility is low. The soils are—

Pheba fine sandy loam, 0 to 2 percent slopes.
Pheba fine sandy loam, 2 to 5 percent slopes.
Stough fine sandy loam, 0 to 2 percent slopes.

These soils occupy about 3.5 percent of the county. More than half of their acreage is in pasture and row crops; the rest is in woods.

These soils are suited to small grain, some truck crops, pasture, and trees. Suitable grasses are bermudagrass, fescue, dallisgrass, bahiagrass, and sudangrass, and suitable legumes are vetch, annual lespedeza, and white clover. Shortleaf and loblolly pines grow well.

If these soils are adequately drained, they produce fair yields of crops. Yields of pasture and hay are good if lime and fertilizer are added. Practices are needed to reduce excess water in winter and spring and to make the best use of the scarce moisture in summer. Close-growing crops are better suited than row crops. A suitable cropping system is 3 years of close-growing crops and 2 years of sweetpotatoes. If crop residue is shredded and left on the surface as a mulch, infiltration is increased and packing is reduced. Because the fragipan slows internal drainage, these soils are wet in winter and early in spring and are easily damaged by trampling.

CAPABILITY UNIT IIIw–2

The only soil in capability unit IIIw–2—Bruno loamy fine sand—is somewhat excessively drained, acid, and alluvial. It is subject to frequent flooding that slightly or moderately damages crops. This soil is brown loamy fine sand throughout the profile. Infiltration and permeability are rapid. The available water capacity and natural fertility are low or very low.

This soil occupies about 1 percent of the county. Most of its acreage is in woods.

The soil is suited to row crops, pasture, and trees. Suitable crops are cotton, early corn, early vegetables, and most small grain. Bermudagrass and bahiagrass are suitable grasses, and crimson clover is a suitable legume. Pine trees grow well.

Practices are needed to lessen the problems caused by low fertility, flooding, and drought in summer. Additions of lime and a complete fertilizer are needed if yields of row crops and pasture are to be high. If good use is made of crop residue, row crops can be grown in areas where the

damage through flooding is slight. By planting crops that mature early the damage caused by drought in summer is lessened. Good tilth is easy to maintain on this soil.

CAPABILITY UNIT IIIw-3

The only soil in capability unit IIIw–3—Houlka clay—is poorly drained, acid, and alluvial. It occurs on the prairie and is subject to flooding that slightly or moderately damages crops. The surface layer is dark-gray to dark grayish-brown clay that is underlain by dark grayish-brown to olive-gray, mottled clay. Infiltration and permeability are slow. The available water capacity is high, and natural fertility is moderate.

This soil occupies about 1 percent of the county. More than half of its acreage is in pasture, and the rest is in woods.

This soil is well suited to row crops, pasture, and trees. Corn, cotton, soybeans, grain sorghum, and small grain are suitable crops. Suitable grasses are bermudagrass, tall fescue, dallisgrass, johnsongrass, and bahiagrass, and suitable legumes are wild winter peas, vetch, annual lespedeza, and white clover. Pine trees grow well.

Drainage of excess water from this soil can be hastened by V- and W-ditches, field laterals, and graded rows. Diversions are needed in some places where water runs in from adjacent hillsides. Bedding helps to drain this soil and to increase its aeration. The seedbed should be prepared in fall so that it settles before crops are planted.

Clean-tilled crops can be grown continuously. A cropping system that improves the soil, however, is 4 years of a sod crop followed by 2 years of a row crop. If crop residue is shredded and left on the surface, infiltration is increased and tilth is improved.

If yields are to be high, additions of phosphate and potash are needed for row crops and pasture. Nitrogen is needed for nonlegumes.

CAPABILITY UNIT IIIw-4

Capability unit IIIw 4 consists of somewhat poorly drained, nearly level, acid soils of the prairie uplands. The surface layer is fine sandy loam, silt loam, or clay 6 to 10 inches thick. The subsoil is clay that varies in color. Infiltration and permeability are slow. The available water capacity is high, and natural fertility is moderate to low. The soils are—

Vaiden clay, deep, 0 to 2 percent slopes.
Vaiden and Oktibbeha silt loams, deep, 0 to 2 percent slopes.

The subsoil of the Vaiden soils is pale olive to yellowish brown mottled with gray, and that of the Oktibbeha soil is yellowish red to red mottled with gray.

The soils of this unit occupy less than 1 percent of the county. About 5 percent of their acreage is cultivated, 25 percent is pastured, and 70 percent is wooded.

These soils are well suited to row crops, pasture, and trees. Suitable crops are soybeans, grain sorghum, and small grain. Bermudagrass, dallisgrass, johnsongrass, and bahiagrass are suitable grasses, and wild winter peas, vetch, and annual and sericea lespedezas are suitable legumes. Shortleaf and loblolly pines grow well.

Draining surface water is a problem and can be hastened by using V- and W-ditches, field laterals, and graded crop rows. Bedding is advisable because it improves drainage and aeration, but the seedbed should be prepared in fall so that it has time to settle and weather before planting.

These soils can be used for clean-tilled crops continuously. Perhaps better, however, are close-growing crops grown most of the time. An example is 4 years of sod crops followed by 2 years of row crops. Crop residue that is shredded and left on the surface as a mulch protects the soil when it is not cultivated, increases infiltration, and improves tilth.

Additions of phosphate and potash are needed for row crops and pasture, and nitrogen is needed for all crops except legumes.

CAPABILITY UNIT IIIs-1

Capability unit IIIs–1 consists of well-drained or somewhat excessively drained, nearly level and gently sloping, acid soils. The surface layer is very dark gray to brown, very friable loamy sand 6 to 12 inches thick. The subsoil is strong-brown to yellowish-red, very friable loamy sand or sand. Infiltration and permeability are rapid. The available water capacity is low, and natural fertility is low to very low. The soils are—

Eustis loamy sand, terrace.
Eustis loamy sand, 2 to 5 percent slopes.

These soils occupy 2 percent of the county. Most of their acreage is wooded.

The soils of this unit are suited to row crops, pasture, and trees. Suitable crops are cotton, truck crops, soybeans, small grain, and grain sorghum. Bermudagrass and bahiagrass are suitable grasses, and crimson clover, vetch, and sericea lespedeza are suitable legumes. Pine trees grow well.

Drought can be lessened by arranging crop rows so that a maximum amount of water is taken into the soils. The rows also should be arranged so that excess water is safely drained into sodded waterways.

Clean-tilled crops and close-growing crops can be grown in about equal amounts. An example is 2 years of small grain followed by 2 years of row crops. Crop residue that is shredded and left on the surface as a mulch protects these soils when they are not cultivated. Good tilth is easily maintained.

Additions of lime and fertilizer are needed for fair to good yields of row crops and pasture.

CAPABILITY UNIT IVe-1

Capability unit IVe–1 consists of well-drained, sloping and strongly sloping, acid soils on uplands and terraces. These soils range from uneroded to severely eroded. The uneroded and moderately eroded soils have a friable fine sandy loam surface layer 4 to 10 inches thick. The subsoil is yellowish-red to red heavy sandy loam, sandy clay loam, or clay loam underlain by loamy sand or sandy loam. The surface layer of the severely eroded soils is fine sandy loam and consists of the original surface soil mixed with the subsoil. Infiltration, permeability, and the available water capacity are moderate. The natural fertility is low. The soils are—

Cahaba fine sandy loam, 5 to 12 percent slopes, eroded.
Orangeburg fine sandy loam, 5 to 8 percent slopes, severely eroded.
Orangeburg fine sandy loam, 8 to 12 percent slopes.
Ruston fine sandy loam, 5 to 8 percent slopes, severely eroded.
Ruston fine sandy loam, 8 to 12 percent slopes.
Ruston fine sandy loam, 8 to 12 percent slopes, eroded.

These soils occupy about 3.5 percent of the county. About half of their acreage is cultivated and pastured, and the rest is forested.

The soils of this unit are suited to row crops, pasture, and trees. Because of the erosion hazard, they are best suited to pasture or trees. Suitable crops are cotton, corn, soybeans, grain sorghum, and small grain. Suitable grasses are bermudagrass, fescue, dallisgrass, johnsongrass, bahiagrass, sudangrass, and millet. Wild winter peas, vetch, lespedeza, and crimson clover are suitable legumes. Loblolly and shortleaf pines grow well.

The hazard of severe erosion can be lessened by using a suitable cropping system and water-control practices. To reduce and slow down runoff in cultivated areas, crop rows are commonly graded and waterways are protected by growing plants. Some of the longer and smoother slopes are terraced to lessen soil losses. In areas where water-control practices are not used, perennial vegetation is needed. Roads should be located on the dividing ridges or parallel to the terraces.

If these soils are cultivated, 2 years of close-growing crops are required for each year of a row crop. Corn can be grown for 2 years if it is preceded by 4 years of small grain or pasture. Crop residue that is shredded and left on the surface helps to control erosion and to increase infiltration. If water-control practices are not used, these soils are best suited to perennial vegetation.

Additions of lime and fertilizer are needed if yields of crops and pasture are to be good.

CAPABILITY UNIT IVe–2

Capability unit IVe–2 consists of moderately well drained, sloping and strongly sloping, acid soils of the uplands. These soils range from uneroded to severely eroded. On the uneroded soils, the surface layer is very friable fine sandy loam 4 to 12 inches thick. The subsoil is yellowish-red to red heavy sandy clay loam to clay that is mottled at a depth of about 20 inches. On the severely eroded soils, the sandy clay loam surface layer is 2 to 4 inches thick and consists of the original surface soil mixed with the subsoil. Infiltration and permeability are slow. The available water capacity is moderate, and natural fertility is low. The soils are -

Shubuta fine sandy loam, 8 to 12 percent slopes.
Shubuta fine sandy loam, 8 to 12 percent slopes, eroded.
Shubuta sandy clay loam, 5 to 8 percent slopes, severely eroded.

These soils occupy about 1.5 percent of the county. Most of their acreage is wooded.

The soils of this unit are suited to row crops, pasture, and trees, but they are better suited to pasture and trees than to row crops. Cotton, corn, soybeans, grain sorghum, and small grain are suitable crops. Suitable grasses are bermudagrass, tall fescue, dallisgrass, johnsongrass, and bahiagrass, and suitable legumes are vetch, wild winter peas, annual and sericea lespedezas, and white clover. Shortleaf and loblolly pines grow well.

The hazard of erosion can be lessened by using a suitable cropping system and water-control practices. To reduce and slow down runoff in cultivated areas, crop rows are commonly graded and waterways are protected by growing plants. On the longer slopes terracing may be practical in lessening soil losses. Roads should be located on the dividing ridges or parallel to the terraces.

If these soils are cultivated to row crops, close-growing crops should be grown for three times as long as row crops. A sod crop grown for 6 years can be followed by 2 years of row crops. Crop residue that is shredded and left on the surface helps to control erosion and to increase infiltration.

Additions of lime and fertilizer are needed for all row crops and pasture.

CAPABILITY UNIT IVe–3

Ora fine sandy loam, 8 to 12 percent slopes, eroded, is the only soil in this capability unit. This soil of the uplands has a fragipan. It is acid and moderately well drained. The surface layer is very friable, dark-gray to brown fine sandy loam 4 to 6 inches thick. It is underlain by yellowish-red sandy loam to clay loam. The fragipan occurs at a depth of about 20 inches and consists of mottled loam or sandy loam. Infiltration is slow. Permeability is moderate above the fragipan and is slow in it. The available water capacity is moderate, and natural fertility is low.

This soil occupies less than 1 percent of the county. Most of it is in woods, and a small part is in pasture.

This soil is suited to row crops, pasture, and trees. Because further erosion is likely in cultivated areas, the soil is best suited to pasture or trees, but row crops can be grown occasionally. Cotton, corn, soybeans, grain sorghum, and small grain are suitable crops. Suitable grasses are bermudagrass, tall fescue, dallisgrass, bahiagrass, and sudangrass, and suitable legumes are wild winter peas, vetch, annual and sericea lespedezas, and white clover. Pine trees grow well.

Erosion can be lessened by using a suitable cropping system and water-control practices. To reduce and slow down runoff in cultivated areas, crop rows are commonly graded and waterways are protected by growing plants. On some of the longer slopes terracing may be practical in controlling soil losses. Roads should be located on the dividing ridges or parallel to the terraces.

For each year of row crops grown on this soil, 3 years of close-growing crops are needed. Corn can be grown for 2 years if it is preceded by 6 years of a sod crop. Crop residue that is shredded and left on the surface helps to control erosion and to increase infiltration. Additions of fertilizer are needed for all row crops and pasture.

CAPABILITY UNIT IVe–4

Capability unit IVe–4 consists of somewhat poorly drained or moderately well drained, sloping, acid soils of the uplands. These soils are susceptible to erosion. The surface layer is very friable, dark grayish-brown fine sandy loam 4 to 12 inches thick. The subsoil varies in texture and color. Infiltration and permeability are slow. The available water capacity is moderate, and natural fertility is low. The soils are—

Angie fine sandy loam, 5 to 8 percent slopes, eroded.
Boswell fine sandy loam, 5 to 8 percent slopes.
Boswell fine sandy loam, 5 to 8 percent slopes, eroded.

The upper subsoil of the Angie soil is yellow to yellowish-brown heavy sandy clay loam to clay, and the lower subsoil is mottled gray to brownish-yellow clay loam to clay. The subsoil of the Boswell soils is red clay that is mottled with gray at a depth below 16 inches.

The soils of this unit occupy about 1 percent of the county. Most of their acreage is wooded.

These soils are suited to row crops, pasture, and trees, but they are better suited to pasture and trees than they are to row crops. Cotton is a suitable crop. Suitable grasses are bermudagrass, dallisgrass, bahiagrass, tall fescue, and sudangrass. Suitable legumes are annual and sericea lespedezas and white clover.

Erosion can be lessened by using a suitable cropping system and water-control practices. To reduce and slow down runoff in cultivated areas, crop rows are commonly graded and waterways are kept in growing plants. On some of the longer slopes, terracing may be practical in controlling soil losses. Roads should be located on the dividing ridges or parallel to the terraces.

These soils can be cultivated if they are kept in close-growing crops for 3 years for every year a row crop is grown. An example is 6 years of sod crops followed by 2 years of corn. Crop residue that is shredded and left on the surface helps to control erosion and to increase infiltration. Additions of fertilizer are needed for all crops and pasture.

CAPABILITY UNIT IVe–5

Capability unit IVe–5 consists of somewhat poorly drained, sloping, acid soils of the prairie uplands. These soils are susceptible to erosion. The surface layer is dark grayish brown silt loam or clay 4 to 10 inches thick. The clay subsoil varies in color. Infiltration and permeability are slow. The available water capacity is high, and natural fertility is moderate to low. The soils are—

Vaiden clay, deep, 5 to 8 percent slopes, eroded.
Vaiden and Oktibbeha silt loams, deep, 5 to 8 percent slopes.

The subsoil of the Vaiden soils is pale olive to yellowish brown mottled with gray. The subsoil of the Oktibbeha soil is yellowish red to red mottled with gray.

The soils of this unit occupy about 1.5 percent of the county. Most of their acreage is wooded.

These soils are suited to row crops, pasture, and trees. Because of the erosion hazard, they are better suited to pasture and trees than to row crops. Suitable crops are cotton, corn, soybeans, grain sorghum, and small grain. Bermudagrass, fescue, dallisgrass, johnsongrass, and bahiagrass are suitable grasses, and wild winter peas, alfalfa, sweetclover, and white clover are suitable legumes. Loblolly and shortleaf pines grow well.

Erosion can be lessened by using a suitable cropping system and water-control practices. To reduce and slow down runoff in cultivated areas, crop rows are commonly graded and waterways are kept in growing plants. On some of the longer slopes terracing is practical in controlling soil losses. Roads should be located on the dividing ridges or parallel to the terraces.

If these soils are cultivated, 3 years of close-growing crops are needed for each year of a row crop. A sod crop grown for 6 years can be followed by 2 years of corn. Crop residue shredded and left on the surface helps to control erosion and to increase infiltration. Additions of fertilizer are needed for all crops and pasture.

CAPABILITY UNIT IVw–1

In capability unit IVw–1 are soils on bottom lands that are likely to be flooded. These soils are acid and, in most places, are poorly drained. They vary in color and texture. Permeability and available water capacity are moderate, and natural fertility is generally low. The soils are—

Bibb soils.
Bibb and Chastain fine sandy loams.
Johnston loam.
Mantachie, Bibb, and Iuka soils.

The Bibb and Chastain soils have a surface layer of very friable, dark-gray fine sandy loam or loam, and a subsoil of gray fine sandy loam or clay that is mottled with brown or yellow. The surface layer of the Johnston soil is friable, black loam that is underlain by mottled gray sandy clay loam at a depth of 18 to 24 inches. Drainage of the Mantachie, Bibb, and Iuka soils ranges from poor to moderately good. The surface layer of these soils varies in texture and in depth to mottling.

The soils of this unit occupy about 20 percent of the county. Most of their acreage is in woods, but some is in pasture.

These soils are best suited to hardwoods and pines, but a late-season row crop can be grown occasionally.

The soils of this unit may be flooded for long periods after a heavy rain. Needed on the soils is a complete system of water disposal that provides V- and W-ditches and field laterals to control water and thus to lessen the damage caused by flooding.

CAPABILITY UNIT IVw–2

Capability unit IVw 2 consists of poorly drained, nearly level, acid soils on uplands and terraces. These soils have a surface layer of light-gray to very dark gray, friable fine sandy loam that is 6 to 12 inches thick. Their subsoil varies in texture and consistence. Infiltration and permeability are slow or very slow. The available water capacity and natural fertility are low. The soils are—

Leaf fine sandy loam.
Mashulaville loam.
Mashulaville fine sandy loam, terrace.

The subsoil of the Mashulaville soil is friable sandy loam, loam, or sandy clay loam that is underlain by a fragipan. The Leaf soil has a gray, firm clay loam to clay subsoil and does not have a fragipan.

The soils of this unit occupy about 1.8 percent of the county. Most of their acreage is in trees, but some is in pasture.

These soils are well suited to pasture and trees and to row crops that are grown occasionally. Bermudagrass, tall fescue, dallisgrass, and bahiagrass are suitable grasses, and wild winter peas and white clover are suitable legumes. Shortleaf and loblolly pines grow well.

The use of these soils is limited by wetness in winter, dryness in summer, and low fertility. The water table is seasonally high. Excess surface water can be removed by graded rows, waterways, V- and W-ditches, and field laterals. Row crops can be grown for 1 year if they are preceded by 4 years of close-growing crops. Lime and a complete fertilizer are needed on these soils if yields of row crops or pasture are to be high.

CAPABILITY UNIT IVw–3

Capability unit IVw–3 consists of poorly drained, nearly level, acid soils of the prairie uplands. These soils are clay throughout the profile. The surface layer is 4 to 10 inches thick, and the subsoil is gray. Infiltration and permeability are slow. The available water capacity is

high, and natural fertility is moderate to low. The soils are—

Eutaw clay, deep.
Eutaw-Vaiden clays, deep.

These soils occupy about 3 percent of the county. Most of their acreage is wooded, and only a small part is pastured.

The soils of this unit are suited to row crops, pasture, and trees. Soybeans, grain sorghum, and small grain are suitable crops. Suitable grasses are bermudagrass, tall fescue, dallisgrass, johnsongrass, and bahiagrass, and suitable legumes are wild winter peas, lespedeza, and white clover. Pine trees grow well.

The clay surface layer is difficult to work, and it can be worked only within a narrow range of moisture content. Planting is often delayed in spring because the soils dry out slowly. The hazard of erosion can be lessened by a water-disposal system that includes graded crop rows and field ditches.

If these soils are adequately drained, clean-tilled crops and close-growing crops can be grown in about equal amounts. A suitable cropping system is 2 years of small grain followed by 2 years of soybeans. Permanent vegetation is the best use for these soils in areas without a good drainage system.

Additions of lime and a complete fertilizer are needed if yields of row crops and pasture are to be good.

CAPABILITY UNIT IVs–1

Eustis loamy sand, 5 to 8 percent slopes, is the only soil in capability unit IVs–1. This soil occurs on uplands and is excessively drained. Its loamy sand surface layer is very friable and 6 to 12 inches thick. The subsoil is strong-brown to yellowish-red, very friable loamy sand or sand. Infiltration and permeability are rapid. The available water capacity is low, and natural fertility is very low.

This soil occupies less than 1 percent of the county. Its acreage is mostly in woods, but some is in pasture.

This soil is suited to row crops, pasture, and trees. Suitable crops are cotton, truck crops, soybeans, small grain, and grain sorghum. Bermudagrass and bahiagrass are suitable grasses, and crimson clover, vetch, and sericea lespedeza are suitable legumes. Pine trees grow well.

Droughtiness can be lessened by arranging rows so that a maximum amount of water is taken in. The rows also should be arranged so that excess water is safely carried away and erosion is reduced.

For every year that these soils are kept in row crops, 2 years of close-growing crops should be grown. An example is 4 years of pasture followed by 2 years of row crops. Shredded crop residue can be used to protect the soil when it is not protected by growing crops.

Additions of a complete fertilizer are needed if yields of row crops and pasture are to remain high. Because the fertilizer is readily leached, it is more effective if it is applied frequently in small amounts.

CAPABILITY UNIT IVs–2

Lauderdale stony fine sandy loam, 5 to 8 percent slopes, is the only soil in capability unit IVs–2. It occurs on uplands and is acid and well drained to excessively drained. This soil has a thin root zone and is droughty, for it is underlain by sandstone. The surface layer of dark grayish-brown stony fine sandy loam is 6 to 10 inches thick. Infiltration and permeability are variable. The available water capacity and natural fertility are low.

This soil occupies less than 1 percent of the county. Most of its acreage is in woods, but some small areas are in pasture.

Perennial vegetation is needed on this soil for protection. The soil is best suited to trees and is poorly suited to bermudagrass, bahiagrass, and sericea lespedeza. Grazing should be limited in areas used as pasture so that the most desirable plants thrive. The woodland should be protected from wildfires and from overgrazing. Additions of a complete fertilizer are needed on the pasture.

CAPABILITY UNIT Vw–1

Only Sandy alluvial land is in capability unit Vw–1. It consists of excessively drained sand and loamy sand that have been recently deposited by streams and have had little profile development. Flooding is likely. Infiltration and permeability are rapid, and available water capacity and natural fertility are low.

This land occupies less than 1 percent of the county and is mostly wooded. It is best suited to trees. Suitable trees are loblolly pine, shortleaf pine, and hardwoods.

Steps should be taken to prevent flooding, the main hazard on this land. Then the woodland should be protected from fires and overgrazing.

CAPABILITY UNIT VIe–1

Capability unit VIe–1 consists of well-drained, strongly sloping, acid soils of the uplands. These soils range from uneroded to severely eroded. The uneroded soils have a surface layer of friable, grayish-brown to dark-brown fine sandy loam that ranges from 4 to 12 inches in thickness. The subsoil is yellowish-red to red sandy loam, sandy clay loam, or clay loam underlain by loamy sand or sandy loam. The surface layer of the severely eroded soils is a mixture of the original surface soil and the subsoil. Infiltration, permeability, and available water capacity are moderate. The natural fertility is low. The soils are—

Orangeburg fine sandy loam, 8 to 12 percent slopes, severely eroded.
Orangeburg fine sandy loam, 12 to 17 percent slopes.
Ruston fine sandy loam, 8 to 12 percent slopes, severely eroded.
Ruston fine sandy loam, 12 to 17 percent slopes.
Ruston fine sandy loam, 12 to 17 percent slopes, eroded.

These soils occupy about 6 percent of the county. About 30 percent of their acreage is in pasture, and 70 percent is in trees.

These soils are suited to pasture and trees. Orchards do well. Suitable grasses are bermudagrass, dallisgrass, bahiagrass, sudangrass, and millet, and suitable legumes are wild winter peas, vetch, sericea lespedeza, and crimson clover. Loblolly pine, shortleaf pine, and hardwoods grow well.

Permanent vegetation is needed on these soils to control erosion, to increase infiltration, and to decrease runoff. Additions of lime and a complete fertilizer are needed on pasture. The pasture should not be overgrazed.

CAPABILITY UNIT VIe–2

Shubuta sandy clay loam, 8 to 12 percent slopes, severely eroded, is the only soil in this capability unit. It occurs on uplands and is acid and moderately well drained. The

surface layer of sandy clay loam is 2 to 4 inches thick and consists of the original surface soil mixed with subsoil. The subsoil is yellowish-red to red clay loam to clay that is mottled at a depth of about 20 inches. Infiltration and permeability are slow. The available water capacity is moderate, and natural fertility is low.

This soil occupies less than 1 percent of the county and is mostly wooded.

The soil is suited to pasture and trees. Bermudagrass and bahiagrass are suitable grasses, and annual and sericea lespedezas are suitable legumes. Loblolly and shortleaf pines grow well.

Permanent vegetation is needed to control further erosion, to reduce runoff, and to increase infiltration. Additions of lime and a complete fertilizer are needed if yields of pasture are to be high. The pasture should not be overgrazed. Protection from overgrazing and from wildfires is needed on the woodland.

CAPABILITY UNIT VIe–3

This capability unit consists of moderately well drained, acid soils of the uplands. These soils range from uneroded to severely eroded. The uneroded and moderately eroded soils have a very friable, dark grayish-brown surface layer that is 4 to 12 inches thick. The subsoil is red clay mottled with gray at a depth below 16 inches. The surface layer of the severely eroded soils is sandy clay loam 2 to 4 inches thick and consists of the original surface soil mixed with the subsoil. Infiltration and permeability are slow. The available water capacity is moderate, and natural fertility is low. The soils are—

Boswell fine sandy loam, 8 to 12 percent slopes.
Boswell fine sandy loam, 8 to 12 percent, eroded.
Boswell sandy clay loam, 5 to 8 percent slopes, severely eroded.
Boswell sandy clay loam, 8 to 12 percent slopes, severely eroded.

These soils occupy about 1 percent of the county. Most of their acreage is in woods, but a small acreage is in row crops or pasture.

The soils of this unit are suited to pasture and trees. Suitable grasses are bermudagrass, dallisgrass, bahiagrass, and sudangrass, and suitable legumes are annual and sericea lespedezas and white clover. Pine trees grow well.

Permanent vegetation is needed to control further erosion, to increase infiltration, and to decrease runoff. Additions of lime and a complete fertilizer are needed for pasture. The pasture should not be overgrazed. Protection from overgrazing and from wildfires is needed on the woodland.

CAPABILITY UNIT VIe–4

Only Boswell, Shubuta, and Cuthbert fine sandy loams, 5 to 12 percent slopes, are in capability unit VIe–4. These soils occur on uplands and are acid and somewhat poorly drained or moderately well drained. The surface layer is friable, dark-gray to brown fine sandy loam 6 to 12 inches thick. The subsoil is yellowish-red or red heavy sandy clay loam or clay underlain at varying depths by mottled sandy clay loam, clay loam, and clay. Infiltration and permeability are slow. The available water capacity is moderate, and natural fertility is low.

These soils occupy less than 1 percent of the county. Most of their acreage is wooded.

The soils are suited to pasture and trees. Bermudagrass and bahiagrass are suitable grasses, but fescue and dallisgrass are poorly suited. Annual lespedeza and white clover are suitable legumes, but sericea lespedeza is poorly suited. Pine trees grow well.

Permanent vegetation is needed to control erosion and to increase infiltration. Additions of lime and a complete fertilizer are needed on pasture. The pasture should not be overgrazed. Protection from overgrazing and from wildfires is needed on the woodland.

CAPABILITY UNIT VIe–5

Sumter clay, 5 to 12 percent slopes, severely eroded, is the only soil in capability unit VIe–5. This soil occurs on prairie uplands and is moderately well drained and neutral to alkaline. The surface layer is very dark gray clay 2 to 4 inches thick. It is a mixture of the original surface soil and the subsoil. The subsoil is olive clay that is underlain by weathered chalk at a depth of less than 20 inches. Infiltration and permeability are slow, and runoff is rapid. The available water capacity is high, and natural fertility is moderate.

This soil occupies less than 1 percent of the county. Most of it is in pasture.

The soil is suited to pasture grasses commonly grown in the county. Suitable grasses are bermudagrass, fescue, dallisgrass, and johnsongrass, and suitable legumes are wild winter peas, alfalfa, sweetclover, and white clover.

Permanent vegetation is needed on this soil to control further erosion, to increase infiltration, and to decrease runoff. Additions of phosphate and potash are needed for all pasture, and nitrogen is needed for all nonlegumes. The pasture should not be overgrazed.

CAPABILITY UNIT VIe–6

Capability unit VIe–6 consists of somewhat poorly drained, strongly sloping, acid soils of the prairie uplands. The surface layer is dark grayish-brown silt loam or clay 4 to 10 inches thick. The subsoil is clay that varies in color. Infiltration and permeability are slow, and runoff is rapid. The available water capacity is high, and natural fertility is moderate to low. The soils are—

Vaiden clay, deep, 8 to 12 percent slopes, eroded.
Vaiden and Oktibbeha silt loams, deep, 8 to 12 percent slopes.

The subsoil of the Vaiden soils is pale olive to yellowish brown mottled with gray. The subsoil of the Oktibbeha soil is yellowish red to red mottled with gray.

The soils of this unit occupy less than 1 percent of the county. Most of their acreage is in woods, and a small amount is in pasture.

These soils are suited to pasture and trees. Bermudagrass, johnsongrass, and bahiagrass are suitable grasses, and wild winter peas and annual lespedeza are suitable legumes. Loblolly and shortleaf pines grow well.

Permanent vegetation is needed on these soils to reduce runoff and to control further erosion (fig. 7). If yields of pasture are to be high, additions of lime and a complete fertilizer are needed. The pasture should not be overgrazed. Protection from overgrazing and from wildfires is needed.

CAPABILITY UNIT VIs–1

Only Eustis loamy sand, 8 to 12 percent slopes, is in capability unit VIs–1. This soil occurs on uplands and is acid and excessively drained. The surface layer is very friable, very dark gray to brown loamy sand 6 to 12 inches

Figure 7.—Kudzu on strong slopes.

thick. It is underlain by very pale brown to yellowish-brown loamy sand or sand. Infiltration and permeability are very rapid. The available water capacity and natural fertility are very low.

This soil occupies less than 1 percent of the county. Most of it is in trees, but small areas are in pasture.

This soil is suited to trees, but not to pasture or row crops. Loblolly and shortleaf pines grow well. Protection from wildfires and from overgrazing is needed on woodland.

CAPABILITY UNIT VIs–2

Capability unit VIs–2 consists of excessively drained to moderately well drained, sloping and strongly sloping soils of the Coastal Plain. The surface layer ranges from loamy sand to stony fine sandy loam and is 4 to 12 inches thick. The subsoil ranges from loamy sand to clay and is underlain by sandstone in some places. Infiltration, permeability, and available water capacity are variable. Natural fertility is low to very low. The soils are—

Lauderdale-Boswell complex, 5 to 12 percent slopes.
Lauderdale-Eustis complex, 8 to 12 percent slopes.

The Lauderdale and Eustis soils are excessively drained, and the Boswell soils are moderately well drained.

The soils of this unit occupy less than 1 percent of the county. All of their acreage is wooded.

These soils are suited to trees, but not to pasture and row crops. Loblolly and shortleaf pines grow well. Protection from wildfires and from overgrazing is needed on the woodland.

CAPABILITY UNIT VIIe–1

Capability unit VIIe–1 consists of well-drained, strongly sloping and steep, acid soils of the uplands. These soils range from uneroded to severely eroded. The uneroded and moderately eroded soils have a friable, grayish-brown surface layer. The subsoil is yellowish-red to red sandy loam, sandy clay loam, or clay loam underlain by loamy sand or sandy loam. The surface layer of the severely eroded soils is fine sandy loam that is a mixture of the original surface soil and the subsoil. Infiltration, permeability, and available water capacity are moderate, and natural fertility is low. The soils are—

Orangeburg fine sandy loam, 17 to 35 percent slopes.
Ruston fine sandy loam, 12 to 17 percent slopes, severely eroded.
Ruston fine sandy loam, 17 to 35 percent slopes.
Ruston fine sandy loam, 17 to 35 percent slopes, eroded.

These soils occupy about 6 percent of the county. All of their acreage is wooded.

The soils of this unit are suited to trees but not to pasture or row crops. Consequently, they should be kept in trees so that runoff is reduced and further erosion is controlled. Protection from wildfires and from overgrazing is needed.

CAPABILITY UNIT VIIe–2

Only Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes, are in capability unit VIIe–2. These soils occur on uplands and are acid and somewhat poorly drained and moderately well drained. The surface layer is friable fine sandy loam 4 to 12 inches thick. The subsoil is yellowish-red or red heavy sandy clay loam to clay that is underlain at varying depths by mottled sandy clay loam, clay loam, and clay. Infiltration and permeability are slow, and the available water capacity is moderate.

These soils occupy about 6 percent of the county. Most of their acreage is wooded.

The soils are well suited to trees, particularly loblolly and shortleaf pines. Protection from wildfires and from overgrazing is needed.

CAPABILITY UNIT VIIe–3

Capability unit VIIe–3 consists of land types in which the soils have been eroded into an intricate pattern of gullies. The soil materials range from sand to clay. Infiltration, permeability, and available water capacity are variable. The land types are—

Gullied land, acid.
Gullied land, alkaline.

The natural fertility of Gullied land, acid, is low, and that of the Gullied land, alkaline, is moderate.

These land types occupy less than 1 percent of the county. Much of their acreage is idle or is reverting to trees.

Gullied land, acid, is suited to pine trees. Gullied land, alkaline, is suited to pasture if it is managed intensively and grazing is controlled.

CAPABILITY UNIT VIIs–1

Eustis loamy sand, 12 to 35 percent slopes, is the only soil in capability unit VIIs–1. This is an excessively drained, acid soil of the uplands. The surface layer is very friable, very dark gray to brown loamy sand 6 to 12 inches thick. It is underlain by very pale brown to yellowish-red loamy sand or sand. Infiltration and permeability are rapid. The available water capacity and natural fertility are very low.

This soil occupies about 4.5 percent of the county. Most of it is wooded.

The soil should be kept in trees, for it is not suited to pasture or to row crops. It is well suited to loblolly and shortleaf pines. Protection from wildfires and from overgrazing is needed.

CAPABILITY UNIT VIIs–2

Lauderdale stony fine sandy loam, 12 to 45 percent slopes, is the only soil in capability unit VIIs–2. This soil occurs on uplands and is acid and well drained to excessively drained. The surface layer is stony fine sandy

loam 6 to 10 inches thick. It is underlain by sandstone. Infiltration and permeability are variable. The available water capacity and natural fertility are low.

This soil occupies less than 1 percent of the county. Most of it is in trees.

The soil is well suited to trees, particularly loblolly and shortleaf pines. Protection from wildfires and overgrazing is needed.

CAPABILITY UNIT VIIs-3

The soils in capability unit VIIs–3 occur on uplands and are acid and moderately well drained to excessively drained. The surface layer ranges from loamy sand to stony fine sandy loam. The subsoil ranges from loamy sand or sand to clay and, in some places, is underlain by sandstone. Infiltration, permeability, and available water capacity are variable. The natural fertility is low. The soils are—

Lauderdale-Boswell complex, 17 to 45 percent slopes.
Lauderdale-Eustis complex, 12 to 45 percent slopes.

The Lauderdale soils are well drained to excessively drained; the Boswell soils are moderately well drained; and the Eustis soils are excessively drained.

The soils in this unit occupy about 2.4 percent of the county. Most of their acreage is wooded.

These soils are best suited to loblolly and shortleaf pines. Protection from wildfires and from overgrazing is needed.

Estimated yields

Estimated yields of the principal crops on most soils in Clarke County, under two levels of management, are shown in table 2. Gullied land and Sandy alluvial land are not listed. Estimates of average yields obtained under the management generally used in the county are listed in columns A, and estimates obtained under improved management are listed in columns B. Generally, the yields in columns B are higher than those in columns A, but for some crops, especially those of high value, there is little or no difference because the management used is as high as is thought to be feasible.

Estimated yields are not given for some crops on some soils because the expected yields are so low, or the needed management is so exacting, that growing these crops is not feasible.

The estimates in table 2 are based on information obtained from many farmers in the county, from agronomists, and from other agricultural leaders. Also used in making estimates were observations by members of the soil survey party, research data compiled by the Coastal Plain Branch Experiment Station, and data from experimental plots. The yield estimates for soils for which no accurate information was available were based on the yield estimates for similar soils.

The yields in columns B are those expected under improved management on soils that are not irrigated. Improved management provides: (1) Proper choice and rotation of crops; (2) amounts of commercial fertilizer and lime that are indicated by the results of soil tests; (3) proper tillage; (4) use of crop residue; (5) planting or seeding high-yielding varieties and hybrids at the proper time and at recommended rates; (6) adequate control of excess water; (7) control of weeds, insects, and plant disease; and (8) practices to conserve soil and water. Although the practices needed vary for the different soils, if the general practices listed are followed and the management suggested in the discussion of the capability units is applied, the yields in columns B of table 2 can be expected.

Woodland [2]

The early settlers found much of Clarke County covered with forest. Longleaf pine was the tree most common on the ridges and in other parts of the uplands and was the tree most in demand. Loblolly pine grew on the lower and middle slopes and on the terraces of the Chickasawhay River, Bucatunna Creek, and other major streams. Shortleaf pine grew mainly in dry places, where it was associated with upland oaks, and on middle slopes, where it was associated with loblolly pine. Stands of valuable hardwoods were extensive on the bottom lands along the Chickasawhay River and Bucatunna Creek and their larger tributaries. These stands included sweetgum, blackgum, cypress, willow, ash, elm, hackberry, red maple, and various kinds of oaks.

Sawmilling caused the early growth of Quitman, Shubuta, Pachuta, and other towns in the county. The Mississippi Eastern and the Shubuta and Southwestern Railroads came into the county mainly to transport timber. The commercial cutting of pines began about 1910 and continued until about 1930, but the hardwood stands were virtually undisturbed until the 1940's, when there was extensive cutting of high-quality trees (*4*)[3].

Forest types

Stands of trees that cover a considerable part of the county may be classed as forest types according to the kinds and proportions of trees in the stands. A forest type generally is given the name of the tree or trees that are dominant in the stands.

Woodland now occupies 332,500 acres, or 74.5 percent of the county. The following lists the forest types and the number of acres occupied by each type.

Forest type	*Acres*
Loblolly-shortleaf pine	171,500
Oak-pine	66,000
Longleaf-slash pine	7,900
Oak-hickory	50,100
Oak-gum-cypress, elm-ash-cottonwood, and other bottom-land hardwoods	37,000
Total	332,500

The loblolly-shortleaf pine, oak-pine, and longleaf-slash pine forest types consist mostly of softwoods. Hardwoods make up the oak-hickory, oak-gum-cypress, and elm-ash-cottonwood forest types.

The loblolly-shortleaf pine forest type consists of forests in which 50 percent or more of the stand is loblolly pine, shortleaf pine, or some other southern yellow pine except longleaf or slash pine. The stand may be pure or mixed and may include oak, hickory, and gum. This forest type is widely distributed in the county but is mostly in soil associations 1, 3, and 5.

[2] J. V. ZARY, woodland conservationist, helped write this subsection.

[3] Italic numbers in parentheses refer to Literature Cited, p. 115.

TABLE 2.--ESTIMATED AVERAGE ACRE YIELDS OF THE PRINCIPAL CROPS UNDER TWO LEVELS OF MANAGEMENT

[Yields in columns A are those obtained under common management; those in columns B are yields to be expected under improved management. Absence of yield indicates crop not commonly grown]

Soil	Cotton		Corn		Oats		Pasture			
							Bahiagrass and legume		Bermudagrass and legume	
	A	B	A	B	A	B	A	B	A	B
	Lb.	Lb.	Bu.	Bu.	Bu.	Bu.	Cow-acre-days 1/	Cow-acre-days 1/	Cow-acre-days 1/	Cow-acre-days 1/
Angie fine sandy loam, 0 to 2 percent slopes	---	---	---	---	---	---	90	205	90	205
Angie fine sandy loam, 2 to 5 percent slopes	---	---	---	---	---	---	90	205	90	205
Angie fine sandy loam, 5 to 8 percent slopes, eroded	---	---	---	---	---	---	90	205	90	205
Bibb and Chastain fine sandy loams	---	---	---	---	---	---	135	---	135	---
Bibb soils	---	---	---	---	---	---	135	---	135	---
Boswell fine sandy loam, 2 to 5 percent slopes	---	---	---	---	---	---	90	205	90	205
Boswell fine sandy loam, 2 to 5 percent slopes, eroded	---	---	---	---	---	---	90	205	90	205
Boswell fine sandy loam, 5 to 8 percent slopes	---	---	---	---	---	---	90	205	90	205
Boswell fine sandy loam, 5 to 8 percent slopes, eroded	---	---	---	---	---	---	90	205	90	205
Boswell fine sandy loam, 8 to 12 percent slopes	---	---	---	---	---	---	70	150	70	150
Boswell fine sandy loam, 8 to 12 percent slopes, eroded	---	---	---	---	---	---	70	150	70	150
Boswell sandy clay loam, 5 to 8 percent slopes, severely eroded	---	---	---	---	---	---	70	150	70	150
Boswell sandy clay loam, 8 to 12 percent slopes, severely eroded	---	---	---	---	---	---	70	150	70	150
Boswell, Shubuta, and Cuthbert fine sandy loams, 5 to 12 percent slopes	---	---	---	---	---	---	70	150	70	150
Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes	---	---	---	---	---	---	---	---	---	---
Bruno loamy fine sand	---	---	---	---	---	---	90	175	80	170
Cahaba fine sandy loam, 0 to 2 percent slopes	450	750	60	100	40	100	150	300	120	225
Cahaba fine sandy loam, 2 to 5 percent slopes	450	750	60	100	40	100	150	300	120	225
Cahaba fine sandy loam, 2 to 5 percent slopes, eroded	450	750	60	100	40	100	150	300	120	225
Cahaba fine sandy loam, 5 to 12 percent slopes, eroded	400	650	50	80	40	100	140	290	110	215
Eustis loamy sand, terrace	---	---	---	---	---	---	90	200	80	185
Eustis loamy sand, 2 to 5 percent slopes	---	---	---	---	---	---	90	175	80	170
Eustis loamy sand, 5 to 8 percent slopes	---	---	---	---	---	---	90	175	80	170
Eustis loamy sand, 8 to 12 percent slopes	---	---	---	---	---	---	---	---	---	---
Eustis loamy sand, 12 to 35 percent slopes	---	---	---	---	---	---	---	---	---	---
Eutaw clay, deep	---	---	---	---	---	---	120	200	80	140

See footnote at end of table.

TABLE 2.--ESTIMATED AVERAGE ACRE YIELDS OF THE PRINCIPAL CROPS UNDER TWO LEVELS OF MANAGEMENT--Continued

Soil	Cotton		Corn		Oats		Pasture			
							Bahiagrass and legume		Bermudagrass and legume	
	A	B	A	B	A	B	A	B	A	B
	Lb.	Lb.	Bu.	Bu.	Bu.	Bu.	Cow-acre-days 1/	Cow-acre-days 1/	Cow-acre-days 1/	Cow-acre-days 1/
Eutaw-Vaiden clays, deep	---	---	---	---	---	---	120	200	80	140
Flint fine sandy loam, loamy substratum, 0 to 2 percent slopes	400	525	45	60	40	100	140	270	100	220
Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes	400	525	45	60	40	100	140	270	100	220
Houlka clay	---	---	---	---	---	---	100	220	90	180
Houston clay, 0 to 2 percent slopes	---	---	---	---	40	100	---	---	80	140
Houston clay, 2 to 5 percent slopes	---	---	---	---	40	100	---	---	80	140
Iuka fine sandy loam	450	600	60	100	30	60	150	300	120	225
Iuka soils, local alluvium	450	600	60	100	30	60	150	300	120	225
Johnston loam	---	---	---	---	---	---	135	---	135	---
Lauderdale stony fine sandy loam, 5 to 8 percent slopes	---	---	---	---	---	---	---	---	---	---
Lauderdale stony fine sandy loam, 12 to 45 percent slopes	---	---	---	---	---	---	---	---	---	---
Lauderdale-Boswell complex, 5 to 12 percent slopes	---	---	---	---	---	---	---	---	---	---
Lauderdale-Boswell complex, 17 to 45 percent slopes	---	---	---	---	---	---	---	---	---	---
Lauderdale-Eustis complex, 8 to 12 percent slopes	---	---	---	---	---	---	---	---	---	---
Lauderdale-Eustis complex, 12 to 45 percent slopes	---	---	---	---	---	---	---	---	---	---
Leaf fine sandy loam	---	---	---	---	---	---	80	200	65	135
Mantachie fine sandy loam	375	500	60	85	30	60	150	300	120	225
Mantachie soils, local alluvium	375	500	60	85	30	60	150	300	120	225
Mantachie, Bibb, and Iuka soils	---	---	---	---	---	---	135	---	135	---
Mashulaville loam	---	---	---	---	---	---	80	200	65	135
Mashulaville fine sandy loam, terrace	---	---	---	---	---	---	80	200	65	135
Ora fine sandy loam, 0 to 2 percent slopes	400	675	50	80	40	100	140	270	100	220
Ora fine sandy loam, 2 to 5 percent slopes	400	675	50	80	40	100	140	270	100	220
Ora fine sandy loam, 2 to 5 percent slopes, eroded	400	675	50	80	40	100	140	270	100	220
Ora fine sandy loam, 5 to 8 percent slopes	350	600	45	70	35	85	110	250	90	200
Ora fine sandy loam, 5 to 8 percent slopes, eroded	350	600	45	70	35	85	110	250	90	200
Ora fine sandy loam, 8 to 12 percent slopes, eroded	---	---	---	---	---	---	100	240	90	200
Orangeburg fine sandy loam, 5 to 8 percent slopes	400	650	50	80	40	100	140	290	110	215
Orangeburg fine sandy loam, 5 to 8 percent slopes, eroded	400	650	50	80	40	100	140	290	110	215
Orangeburg fine sandy loam, 5 to 8 percent slopes, severely eroded	---	---	---	---	---	---	110	250	90	190
Orangeburg fine sandy loam, 8 to 12 percent slopes	---	---	---	---	---	---	110	250	90	190

See footnote at end of table.

TABLE 2.--ESTIMATED AVERAGE ACRE YIELDS OF THE PRINCIPAL CROPS UNDER TWO LEVELS OF MANAGEMENT--Continued

Soil	Cotton		Corn		Oats		Pasture			
							Bahiagrass and legume		Bermudagrass and legume	
	A	B	A	B	A	B	A	B	A	B
	Lb.	Lb.	Bu.	Bu.	Bu.	Bu.	Cow-acre-days 1/	Cow-acre-days 1/	Cow-acre-days 1/	Cow-acre-days 1/
Orangeburg fine sandy loam, 8 to 12 percent slopes, severely eroded--	---	---	---	---	---	---	100	240	80	180
Orangeburg fine sandy loam, 12 to 17 percent slopes----------	---	---	---	---	---	---	---	---	---	---
Orangeburg fine sandy loam, 17 to 35 percent slopes----------	---	---	---	---	---	---	---	---	---	---
Pheba fine sandy loam, 0 to 2 percent slopes----------	250	450	40	50	30	60	105	210	90	175
Pheba fine sandy loam, 2 to 5 percent slopes----------	250	450	40	50	30	60	105	210	90	175
Prentiss fine sandy loam, 0 to 2 percent slopes----------	400	675	50	80	40	100	140	270	100	220
Prentiss fine sandy loam, 2 to 5 percent slopes----------	400	675	50	80	40	100	140	270	100	220
Ruston fine sandy loam, 0 to 2 percent slopes----------	450	750	60	100	40	100	150	300	120	225
Ruston fine sandy loam, 2 to 5 percent slopes----------	450	750	60	100	40	100	150	300	120	225
Ruston fine sandy loam, 2 to 5 percent slopes, eroded----------	450	750	60	100	40	100	150	300	120	225
Ruston fine sandy loam, 5 to 8 percent slopes----------	400	650	50	80	40	100	140	290	110	215
Ruston fine sandy loam, 5 to 8 percent slopes, eroded----------	400	650	50	80	40	100	140	290	110	215
Ruston fine sandy loam, 5 to 8 percent slopes, severely eroded--	---	---	---	---	---	---	110	250	90	190
Ruston fine sandy loam, 8 to 12 percent slopes----------	---	---	---	---	---	---	110	250	90	190
Ruston fine sandy loam, 8 to 12 percent slopes, eroded----------	---	---	---	---	---	---	110	250	90	190
Ruston fine sandy loam, 8 to 12 percent slopes, severely eroded--	---	---	---	---	---	---	100	240	80	180
Ruston fine sandy loam, 12 to 17 percent slopes----------	---	---	---	---	---	---	---	---	---	---
Ruston fine sandy loam, 12 to 17 percent slopes, eroded----------	---	---	---	---	---	---	---	---	----	---
Ruston fine sandy loam, 12 to 17 percent slopes, severely eroded--	---	---	---	---	---	---	---	---	---	---
Ruston fine sandy loam, 17 to 35 percent slopes----------	---	---	---	---	---	---	---	---	---	---
Ruston fine sandy loam, 17 to 35 percent slopes, eroded----------	---	---	---	---	---	---	---	---	---	---
Savannah fine sandy loam, 0 to 2 percent slopes----------	400	675	50	80	40	100	140	270	100	220
Savannah fine sandy loam, 2 to 5 percent slopes----------	400	675	50	80	40	100	140	270	100	220
Savannah fine sandy loam, 2 to 5 percent slopes, eroded----------	400	675	50	80	40	100	140	270	100	220
Savannah fine sandy loam, 5 to 8 percent slopes, eroded----------	350	600	45	70	35	85	110	250	90	200
Shubuta fine sandy loam, 2 to 5 percent slopes----------	400	525	45	60	40	100	140	270	100	220

See footnote at end of table.

TABLE 2.--ESTIMATED AVERAGE ACRE YIELDS OF THE PRINCIPAL CROPS UNDER TWO LEVELS OF MANAGEMENT--Continued

Soil	Cotton		Corn		Oats		Pasture			
							Bahiagrass and legume		Bermudagrass and legume	
	A	B	A	B	A	B	A	B	A	B
	Lb.	Lb.	Bu.	Bu.	Bu.	Bu.	Cow-acre-days 1/	Cow-acre-days 1/	Cow-acre-days 1/	Cow-acre-days 1/
Shubuta fine sandy loam, 2 to 5 percent slopes, eroded	400	525	45	60	40	100	140	270	100	220
Shubuta fine sandy loam, 5 to 8 percent slopes	360	475	30	50	35	85	110	250	90	200
Shubuta fine sandy loam, 5 to 8 percent slopes, eroded	360	475	30	50	35	85	110	250	90	200
Shubuta fine sandy loam, 8 to 12 percent slopes	---	---	---	---	---	---	100	240	90	200
Shubuta fine sandy loam, 8 to 12 percent slopes, eroded	---	---	---	---	---	---	100	240	90	200
Shubuta sandy clay loam, 5 to 8 percent slopes, severely eroded	---	---	---	---	---	---	100	240	90	200
Shubuta sandy clay loam, 8 to 12 percent slopes, severely eroded	---	---	---	---	---	---	---	---	---	---
Stough fine sandy loam, 0 to 2 percent slopes	250	450	40	50	30	60	105	210	90	175
Sumter clay, 2 to 5 percent slopes, eroded	---	---	---	---	---	---	---	---	90	180
Sumter clay, 2 to 5 percent slopes, severely eroded	---	---	---	---	---	---	---	---	75	165
Sumter clay, 5 to 8 percent slopes, eroded	---	---	---	---	---	---	---	---	75	165
Sumter clay, 5 to 12 percent slopes, severely eroded	---	---	---	---	---	---	---	---	60	140
Tilden fine sandy loam, 0 to 2 percent slopes	400	675	50	80	40	100	140	270	100	220
Tilden fine sandy loam, 2 to 5 percent slopes	400	675	50	80	40	100	140	270	100	220
Tilden fine sandy loam, 2 to 5 percent slopes, eroded	400	675	50	80	40	100	140	270	100	220
Tilden fine sandy loam, 5 to 8 percent slopes, eroded	350	600	45	70	35	85	110	250	90	200
Vaiden clay, deep, 0 to 2 percent slopes	370	550	---	---	30	60	120	220	90	180
Vaiden clay, deep, 2 to 5 percent slopes	370	550	---	---	30	60	120	220	90	180
Vaiden clay, deep, 2 to 5 percent slopes, eroded	370	550	---	---	30	60	120	220	90	180
Vaiden clay, deep, 5 to 8 percent slopes, eroded	350	525	---	---	30	60	110	210	80	170
Vaiden clay, deep, 8 to 12 percent slopes, eroded	---	---	---	---	---	---	100	200	75	160
Vaiden and Oktibbeha silt loams, deep, 0 to 2 percent slopes	370	550	---	---	30	60	120	220	90	180
Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes	370	550	---	---	30	60	120	220	90	180
Vaiden and Oktibbeha silt loams, deep, 5 to 8 percent slopes	350	525	---	---	30	60	110	210	80	170
Vaiden and Oktibbeha silt loams, deep, 8 to 12 percent slopes	---	---	---	---	---	---	100	200	75	160
Wahee fine sandy loam	---	---	---	---	---	---	80	200	65	135
West Point clay	---	---	---	---	30	60	---	---	90	180

1/ The number of days 1 acre will support one cow, horse, or steer without injury to the pasture.

In the oak-pine forest type, 50 percent or more of the stand consists of hardwoods, generally upland oaks, and 25 to 49 percent is southern pine. The stand may be pure or mixed and may include gum, hickory, and yellow-poplar. This forest type is intermingled with the loblolly-shortleaf pine type but is not so extensive. The oak-pine forest type occurs mainly in soil associations 3 and 5. A few small areas are in soil association 4.

The longleaf-slash pine forest type consists of forests in which 50 percent or more of the stand is longleaf pine, slash pine, or other southern pines. The stand may be pure or mixed and may include oak and gum. This forest type occurs on Eustis soils in soil association 4. The longleaf pine grows in pure and mixed stands, especially on ridges and in dry areas. In a few places it intermingles with shortleaf pine. Natural stands of slash pine are few because Clarke County is too far north for good growth of that tree. Slash pine (fig. 8), however, has been successfully planted in parts of the county, though it is likely to be damaged by sleet and by ice forming on the trees.

In the oak-hickory forest type, 50 percent or more of the stand consists of upland oaks or hickory, alone or mixed. Yellow-poplar, elm, and maple are commonly present. In a few places this forest type intermingles with the oak-pine type. In Clarke County the oak-hickory forest type occurs mainly in soil association 5. In the north-central part of the county, it occurs to a lesser extent in soil association 6.

The oak-gum-cypress forest type is on bottom lands along streams. At least 50 percent of its stand is tupelo, blackgum, sweetgum, oak, or southern cypress, alone or mixed. Also common in the stand are willow, ash, elm, hackberry, and maple. The oak-gum-cypress type generally occurs on the alluvial soils of soil association 2.

The elm-ash-cottonwood forest type has at least 50 percent of its stand in elm, ash, or cottonwood, alone or mixed. Also common are willow, sycamore, beech, and maple. Like the oak-gum-cypress type, this type is in soil association 2.

Table 3 shows the volume of growing stock and sawtimber in 1957.

Figure 8.—**Ten-year-old slash pines on steep Ruston fine sandy loam.**

TABLE 3.--VOLUME OF GROWING STOCK AND OF SAWTIMBER IN 1957

Trees	Growing stock	Sawtimber
	Million cu. ft.	Million bd. ft.
Pines	126.3	596.0
Other softwoods	.3	1.5
Total softwoods	126.6	597.5
Cottonwood, sweetgum, yellow-poplar, and other soft hardwoods	25.7	65.5
Oaks	27.3	46.0
Ash, hickory, sycamore, and other hardwoods	9.3	26.9
Total hardwoods	62.3	138.4
Total, all species	188.9	735.9

Woodland suitability grouping

Management of woodland can be planned more effectively if soils are grouped according to those characteristics that affect growth of trees and management of the stands. For this reason, the soils of Clarke County have been placed in 17 woodland suitability groups. Each group consists of soils that have about the same suitability for wood crops, require about the same management, and have about the same potential productivity.

Listed in table 4, and later described in the text, are the 17 woodland suitability groups in this county. In table 4 the average site index is given for various kinds of trees on each suitability group. Also given are the hazards and limitations that affect the management of each group. The terms used in this table require explanation.

The potential productivity of a soil for a specified kind of tree is expressed as a *site index*. A site index for a given soil is the height, in feet, that a specified kind of tree growing on that soil will reach in 50 years. The site index of a soil is determined mainly by the capacity of the soil to provide moisture and growing space for tree roots. In table 4 a site index is the average range for all the soils in the suitability group. The site index for any one soil in the group may be somewhat different from the average.

As shown in table 4, each woodland suitability group has, in varying degree, limitations that affect its management. Some of these limitations are expressed in the relative terms, slight, moderate, or severe. The relative term expresses the degree of limitation, as explained in the following:

SEEDLING MORTALITY: Even when healthy seedlings of a suitable tree are correctly planted or occur naturally in adequate numbers, some of them will not survive if characteristics of the soil are unfavorable.

Mortality is *slight* if not more than 25 percent of the planted seedlings die, or if trees ordinarily regenerate naturally in places where there are enough seeds. It is *moderate* if 25 to 50 percent of the seedlings die, or if trees

TABLE 4.--WOODLAND

[Dashed lines indicate that not enough data are available for

Woodland suitability group, soils, and mapping symbols	Potential soil productivity		Commercially suited trees
	Tree	Site index	
Group 1: Well-drained, medium-textured soils-- Cahaba fine sandy loam (CaA, CaB, CaB2, CaD2). Orangeburg fine sandy loam (OrC, OrC2, OrC3, OrD, OrD3, OrE, OrF). Ruston fine sandy loam (RuA, RuB, RuB2, RuC, RuC2, RuC3, RuD, RuD2, RuD3, RuE, RuE2, RuE3, RuF, RuF2).	Longleaf pine--------- Loblolly pine--------- Shortleaf pine-------- Sweetgum---------- Red oak----------	67 to 75 74 to 83 63 to 72 65 to 75 55 to 65	Ridgetops, upper slopes, and eroded areas: Loblolly pine and shortleaf pine. Lower slopes and uneroded areas: Black cherry, cherrybark oak, Shumard oak, southern red oak, white oak, sweetgum, black tupelo, and yellow-poplar.
Group 2: Moderately well drained and somewhat poorly drained soils that have a medium-textured surface layer and clayey subsoil-- Angie fine sandy loam (AnA, AnB, AnC2). Boswell fine sandy loam (BfB, BfB2, BfC, BfC2, BfD, BfD2). Boswell sandy clay loam (BoC3, BoD3). Boswell, Shubuta, and Cuthbert fine sandy loams (BtD, BtF). Flint fine sandy loam (FfA, FfB). Shubuta fine sandy loam (ShB, ShB2, ShC, ShC2, ShD, ShD2). Shubuta sandy clay loam (SnC3, SnD3). Wahee fine sandy loam (Wa).	Longleaf pine--------- Loblolly pine--------- Shortleaf pine--------	66 to 74 72 to 88 60 to 75	Ridgetops, upper slopes, and eroded areas: Loblolly pine and shortleaf pine. Lower slopes and uneroded areas: Cherrybark oak, Shumard oak, southern red oak, swamp chestnut oak, water oak, white oak, sweetgum, black tupelo, and yellow-poplar.
Group 3: Moderately well drained soils that have a medium-textured surface layer and medium-textured to moderately fine textured subsoil over a fragipan-- Ora fine sandy loam (OfA, OfB, OfB2, OfC, OfC2, OfD2). Prentiss fine sandy loam (PrA, PrB). Savannah fine sandy loam (SfA, SfB, SfB2, SfC2). Tilden fine sandy loam (TfA, TfB, TfB2, TfC2).	Longleaf pine--------- Loblolly pine--------- Shortleaf pine--------	76 to 81 78 to 96 60 to 70	Ridgetops, upper slopes, and eroded areas: Longleaf pine, loblolly pine, and shortleaf pine. Lower slopes and uneroded areas: Cherrybark oak, Shumard oak, southern red oak, swamp chestnut oak, water oak, white oak, sweetgum, black tupelo, and yellow-poplar.

SUITABILITY GROUPS OF SOILS

estimating site index, or that the trees do not ordinarily grow on the soil listed]

Seedling mortality	Plant competition	Equipment limitations	Erosion hazard	Windthrow hazard
Slight----------	Slight or moderate--	Slight or moderate--	Slight to severe--	Slight.
Slight or moderate--	Slight or moderate--	Slight or moderate--	Slight to severe--	Slight.
Slight----------	Slight or moderate--	Slight----------	Slight or moderate--	Slight or moderate.

TABLE 4.--WOODLAND SUITABILITY

Woodland suitability group, soils, and mapping symbols	Potential soil productivity		Commercially suited trees
	Tree	Site index	
Group 4: Dominantly poorly drained and somewhat poorly drained, alluvial soils-- Bibb soils (Bb). Bibb and Chastain fine sandy loams (Bc). Mantachie, Bibb, and Iuka soils (Mn).	Loblolly pine---------	89 to 109	Green ash, white ash, cottonwood, red maple, cherrybark oak, laurel oak, nuttall oak, Shumard oak, swamp chestnut oak, water oak, white oak, willow oak, persimmon, loblolly pine, spruce pine, sweetgum, American sycamore, water tupelo, and yellow-poplar.
Group 5: Poorly drained, medium-textured soils over a fragipan or claypan-- Leaf fine sandy loam (Lf). Mashulaville loam (Ms). Mashulaville fine sandy loam (Mt).	Loblolly pine---------	89 to 99	Cherrybark oak, Shumard oak, loblolly pine, longleaf pine, slash pine, and sweetgum.
Group 6: Somewhat poorly drained or moderately well drained, medium-textured, alluvial soils-- Iuka fine sandy loam (Ik). Iuka soils (Iu). Mantachie fine sandy loam (Ma). Mantachie soils (Mc).	Loblolly pine---------	89 to 111	Cottonwood, hackberry, southern magnolia, red maple, cherrybark oak, laurel oak, nuttall oak, Shumard oak, southern red oak, swamp chestnut oak, water oak, white oak, willow oak, persimmon, loblolly pine, spruce pine, sweetgum, American sycamore, black tupelo, black walnut, and yellow-poplar.
Group 7: Well-drained to somewhat excessively drained loamy sands-- Eustis loamy sand (EsB, EsC, EsD, EsF, Et).	Longleaf pine--------- Shortleaf pine--------	76 to 86 66 to 74	Loblolly pine, longleaf pine, and shortleaf pine.
Group 8: Somewhat poorly drained, medium-textured soils that have a fragipan-- Pheba fine sandy loam (PhA, PhB). Stough fine sandy loam (StA).	Loblolly pine---------	82 to 100	Cherrybark oak, Shumard oak, loblolly pine, slash pine, and sweetgum.
Group 9: Very poorly drained, medium-textured, alluvial soil that is high in organic-matter content-- Johnston loam (Jo).	----------	---- ----	Green ash, white ash, baldcypress, water tupelo, and yellow-poplar.

GROUPS OF SOILS--Continued

Seedling mortality	Plant competition	Equipment limitations	Erosion hazard	Windthrow hazard
Slight or moderate--	Moderate or severe--	Severe----------	Slight----------	Slight.
Slight or moderate--	Severe----------	Moderate or severe--	Slight----------	Severe.
Slight or moderate--	Moderate or severe--	Moderate----------	Slight----------	Slight.
Slight or moderate--	Moderate----------	Slight or moderate--	Slight or moderate--	Slight.
Slight or moderate--	Moderate----------	Moderate----------	Slight----------	Moderate.
Slight----------	Moderate or severe--	Severe----------	Slight----------	Slight.

TABLE 4.--WOODLAND SUITABILITY

Woodland suitability group, soils, and mapping symbols	Potential soil productivity		Commercially suited trees
	Tree	Site index	
Group 10: Excessively drained to moderately well drained loamy sands to clays-- Lauderdale stony fine sandy loam (LaC, LaF). Lauderdale-Boswell complex (LbD, LbF). Lauderdale-Eustis complex (LeD, LeF).	----------	---------	Shortleaf pine and loblolly pine.
Group 11: Somewhat excessively drained or excessively drained, sandy alluvial soils-- Bruno loamy fine sand (Bu). Sandy alluvial land (Sa).	----------	---------	Black cherry, cottonwood, hackberry, southern magnolia, red maple, cherrybark oak, Shumard oak, southern red oak, swamp chestnut oak, water oak, white oak, willow oak, spruce oak, sweetgum, American sycamore, black tupelo, black walnut, and yellow-poplar.
Group 12: Somewhat poorly drained or moderately well drained, acid, clayey or loamy soils that are underlain in many places by marl or chalk, and have slow internal drainage-- Eutaw clay (Eu). Eutaw-Vaiden clays (Ev). Vaiden clay (VaA, VaB, VaB2, VaC2, VaD2). Vaiden and Oktibbeha silt loams (VoA, VoB, VoC, VoD).	Loblolly pine--------- Shortleaf pine--------	70 to 86 62 to 76	Cherrybark oak, loblolly pine, shortleaf pine, and sweetgum.
Group 13: Somewhat poorly drained, alluvial, acid clay - Houlka clay (Ho).	Cherrybark oak-------- Willow oak---------- Sweetgum----------	85 to 95 85 to 95 85 to 95	Cherrybark oak, willow oak, loblolly pine, and sweetgum.
Group 14: Moderately well drained, thin, alkaline, sandy to clayey soils that are underlain by chalk-- Gullied land (Gk) Sumter clay (SuB2, SuB3, SuC2, SuD3).	----------	---------	Eastern redcedar----------

GROUPS OF SOILS--Continued

Seedling mortality	Plant competition	Equipment limitations	Erosion hazard	Windthrow hazard
Moderate or severe--	Severe----------	Slight or moderate--	Slight or moderate--	Slight to severe.
Moderate or severe--	Moderate or severe--	Moderate----------	Slight----------	Slight.
Slight----------	Moderate----------	Moderate----------	Slight----------	Slight.
Moderate----------	Severe----------	Moderate or severe--	Slight----------	Slight.
Moderate or severe--	Severe----------	Moderate or severe--	Slight to severe--	Slight to severe.

TABLE 4.--WOODLAND SUITABILITY

Woodland suitability group, soils, and mapping symbols	Potential soil productivity		Commercially suited trees
	Tree	Site index	
Group 15: Moderately well drained clay that is thin, neutral to alkaline, and underlain by chalk--West Point clay (Wp).	Sweetgum Cottonwood Cherrybark oak Willow oak	85 to 95 95 to 105 95 to 105 85 to 95	Eastern cotton, cherrybark oak, willow oak, and sweetgum.
Group 16: Moderately well drained clays that occur on the uplands and are neutral or mildly alkaline--Houston clay (HuA, HuB).			Cherrybark oak, sweetgum, and eastern redcedar.
Group 17: Medium-textured or coarse-textured soil that occurs on the uplands and has variable drainage--Gullied land (Ga).			Loblolly pine

do not regenerate naturally in numbers needed for adequate restocking. In some places replanting to fill open spaces will be necessary. Mortality is *severe* if more than 50 percent of the planted seedlings die or if trees do not ordinarily reseed naturally in places where there are enough seeds. If mortality is severe, plant the seedlings where the seeds do not grow, prepare special seedbeds, and use good methods of planting to insure a full stand of trees.

PLANT COMPETITION: When a woodland is disturbed by fire, cutting, grazing or some other means, undesirable brush, trees, and plants may invade. The invading growth competes with the desirable trees and hinders their establishment and growth.

Competition is *slight* if undesirable plants are no special problem. It is *moderate* if the invaders delay but do not prevent the establishment of a normal, fully stocked stand. Where plant competition is moderate, seedbed preparation is generally not needed and simple methods can be used to prevent undesirable plants from invading. Competition is *severe* if trees cannot regenerate naturally. Where competition is severe, carefully prepare the site and use management that includes controlled burning, spraying with chemicals, and girdling.

EQUIPMENT LIMITATION: Drainage, slope, stoniness, soil texture, or other soil characteristics may restrict or prohibit the use of ordinary equipment in pruning, thinning, harvesting, or other woodland management. Different soils may require different kinds of equipment, methods of operation, or seasons when equipment may be used.

Limitation is *slight* if there are no restrictions on the type of equipment or on the time of year that the equipment can be used. It is *moderate* if slopes are moderately steep, if heavy equipment is restricted by wetness in winter and early in spring, or if the use of equipment damages the tree roots to some extent. Equipment limitation is *severe* if many types of equipment cannot be used, if the time equipment cannot be used is more than 3 months a year, and if the use of equipment severely damages the roots of trees and the structure and stability of the soil. Limitation is severe on moderately steep and steep soils that are stony and have rock outcrops. It is also severe on wet bottom lands and low terraces in winter or early in spring.

EROSION HAZARD: Woodland can be protected from erosion by choosing the kinds of trees, by adjusting the rotation age and cutting cycles, by using special techniques in management, and by carefully constructing and maintaining roads, trails, and landings.

Erosion hazard is rated according to the risk of erosion on well-managed woodland that is not protected by special practices. It is *slight* where a small loss of soil is expected. Generally, erosion is slight if slopes range from 0 to 2 percent and runoff is slow or very slow. The erosion hazard is *moderate* where there would be a moderate loss of soil if runoff is not controlled and the vegetative cover is not adequate for protection. It is *severe* where steep slopes, rapid runoff, slow infiltration and permeability, and past erosion make the soil susceptible to severe erosion.

WINDTHROW HAZARD: Soil characteristics affect the development of tree roots and the firmness that the roots anchor the trees in the soil so that it resists the force of the wind. Root development may be prevented by a high water table or by an impermeable layer. The protection of surrounding trees also affects windthrow hazard. Knowing the degree of this hazard is important when choosing trees for planting and when planning release cuttings or harvest cuttings.

The windthrow hazard is *slight* if roots hold the tree firmly against a normal wind. Individual trees are likely to remain standing if protective trees on all sides are removed. The hazard is *moderate* if the roots develop enough to hold the tree firmly except when the soil is excessively wet and the wind velocity is very high. It is *severe* if rooting is not deep enough to give adequate sta-

GROUPS OF SOILS--Continued

Seedling mortality	Plant competition	Equipment limitations	Erosion hazard	Windthrow hazard
Slight	Severe	Moderate or severe	Slight	Slight.
Slight	Severe	Moderate or severe	Slight	Slight.
Moderate or severe	Slight	Severe	Severe	Slight to moderate.

bility. Individual trees are likely to be blown over if they are released on all sides.

WOODLAND SUITABILITY GROUP 1

This group consists of well-drained, medium-textured soils that range from nearly level to steep. Infiltration, permeability, and available water capacity are moderate. Runoff is rapid on slopes of more than 12 percent. The soils are—

Cahaba fine sandy loam, 0 to 2 percent slopes.
Cahaba fine sandy loam, 2 to 5 percent slopes.
Cahaba fine sandy loam, 2 to 5 percent slopes, eroded.
Cahaba fine sandy loam, 5 to 12 percent slopes, eroded.
Orangeburg fine sandy loam, 5 to 8 percent slopes.
Orangeburg fine sandy loam, 5 to 8 percent slopes, eroded.
Orangeburg fine sandy loam, 5 to 8 percent slopes, severely eroded.
Orangeburg fine sandy loam, 8 to 12 percent slopes.
Orangeburg fine sandy loam, 8 to 12 percent slopes, severely eroded.
Orangeburg fine sandy loam, 12 to 17 percent slopes.
Orangeburg fine sandy loam, 17 to 35 percent slopes.
Ruston fine sandy loam, 0 to 2 percent slopes.
Ruston fine sandy loam, 2 to 5 percent slopes.
Ruston fine sandy loam, 2 to 5 percent slopes, eroded.
Ruston fine sandy loam, 5 to 8 percent slopes.
Ruston fine sandy loam, 5 to 8 percent slopes, eroded.
Ruston fine sandy loam, 5 to 8 percent slopes, severely eroded.
Ruston fine sandy loam, 8 to 12 percent slopes.
Ruston fine sandy loam, 8 to 12 percent slopes, eroded.
Ruston fine sandy loam, 8 to 12 percent slopes, severely eroded.
Ruston fine sandy loam, 12 to 17 percent slopes.
Ruston fine sandy loam, 12 to 17 percent slopes, eroded.
Ruston fine sandy loam, 12 to 17 percent slopes, severely eroded.
Ruston fine sandy loam, 17 to 35 percent slopes.
Ruston fine sandy loam, 17 to 35 percent slopes, eroded.

On these soils seedling mortality is slight or moderate. When the distribution of rainfall is good, the loss of planted stock is generally slight, but replanting may be necessary for restocking after years that are drier than normal.

Plant competition is slight or moderate. In some areas the control of hardwoods is needed so that stands of desirable trees can be planted. Although adequate stands restock naturally where there is enough seed, regeneration and growth may be delayed if plant competition is not controlled (fig. 9).

The use of equipment is slightly or moderately limited. Limitation is moderate on slopes of more than 12 percent.

The erosion hazard depends on the slope and is slight to severe. It is slight on slopes of 0 to 8 percent, moderate on slopes of 8 to 12 percent, and severe on slopes of 12 to 35 percent. On the steeper slopes the location of roads and skid trails is important. If logging is at tree length, all skidding should be uphill, and the butt end of the pole should be raised or kept in a skidding pan. If pulpwood sticks 5 feet long are cut in the woods, the sticks should be moved to a loading point in slides.

The windthrow hazard is slight and is not a management problem. Practices to control diseases, insects, and other pests are not needed.

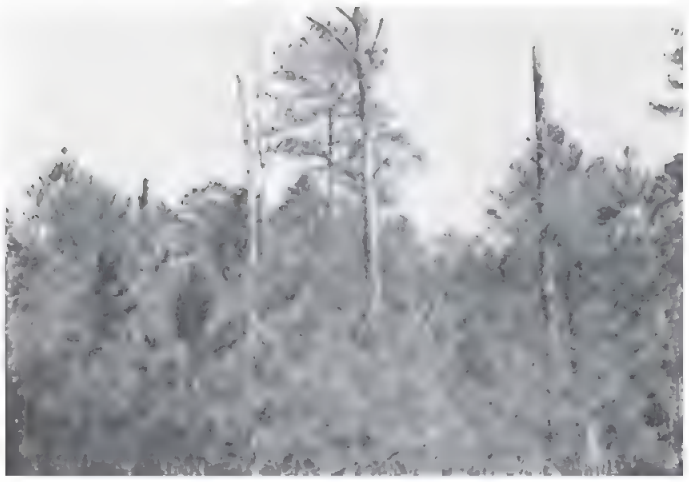

Figure 9.—**Large hardwoods were girdled to permit growth of pine seedlings.**

WOODLAND SUITABILITY GROUP 2

This group consists of moderately well drained and somewhat poorly drained soils that have a medium-textured surface layer and a clayey subsoil. These soils range from nearly level to steep. Infiltration is moderate to slow, and permeability is slow. The available water capacity is moderate. The soils are—

Angie fine sandy loam, 0 to 2 percent slopes.
Angie fine sandy loam, 2 to 5 percent slopes.
Angie fine sandy loam, 5 to 8 percent slopes, eroded.
Boswell fine sandy loam, 2 to 5 percent slopes.
Boswell fine sandy loam, 2 to 5 percent slopes, eroded.
Boswell fine sandy loam, 5 to 8 percent slopes.
Boswell fine sandy loam, 5 to 8 percent slopes, eroded.
Boswell fine sandy loam, 8 to 12 percent slopes.
Boswell fine sandy loam, 8 to 12 percent slopes, eroded.
Boswell sandy clay loam, 5 to 8 percent slopes, severely eroded.
Boswell sandy clay loam, 8 to 12 percent slopes, severely eroded.
Boswell, Shubuta, and Cuthbert fine sandy loams, 5 to 12 percent slopes.
Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes.
Flint fine sandy loam, loamy substratum, 0 to 2 percent slopes.
Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes.
Shubuta fine sandy loam, 2 to 5 percent slopes.
Shubuta fine sandy loam, 2 to 5 percent slopes, eroded.
Shubuta fine sandy loam, 5 to 8 percent slopes.
Shubuta fine sandy loam, 5 to 8 percent slopes, eroded.
Shubuta fine sandy loam, 8 to 12 percent slopes.
Shubuta fine sandy loam, 8 to 12 percent slopes, eroded.
Shubuta sandy clay loam, 5 to 8 percent slopes, severely eroded.
Shubuta sandy clay loam, 8 to 12 percent slopes, severely eroded.
Wahee fine sandy loam.

On these soils seedling mortality is generally slight, but it may be moderate in years of low rainfall. Because 25 to 50 percent of the seedlings may die, some replanting is needed. In many of the galled and gullied areas, mulching is needed.

Plant competition is slight or moderate. Some scrubby hardwoods may invade, but not enough to prevent adequate growth of desired trees.

The use of equipment is slightly or moderately limited. Limitation is moderate on slopes of more than 12 percent.

The erosion hazard depends on the slope and is slight to severe. It is slight on slopes of 0 to 8 percent, moderate on slopes of 8 to 12 percent, and severe on slopes of more than 12 percent. On the steeper slopes the location of roads and skid trails is important. If logging is at tree length, all skidding should be uphill, and the butt end of the pole should be raised or kept in a skidding pan. If pulpwood sticks 5 feet long are cut in the woods, the sticks should be moved to a loading point in slides.

Windthrow hazard is slight and is not a management problem. Practices that control diseases, insects, and other pests are not needed.

WOODLAND SUITABILITY GROUP 3

This group consists of moderately well drained soils that have a medium-textured surface layer and a medium-textured to moderately fine textured subsoil that has a fragipan. These soils range from nearly level to strongly sloping. Permeability is moderate above the pan and is very slow in it. The available water capacity is moderate. The soils are—

Ora fine sandy loam, 0 to 2 percent slopes.
Ora fine sandy loam, 2 to 5 percent slopes.
Ora fine sandy loam, 2 to 5 percent slopes, eroded.
Ora fine sandy loam, 5 to 8 percent slopes.
Ora fine sandy loam, 5 to 8 percent slopes, eroded.
Ora fine sandy loam, 8 to 12 percent slopes, eroded.
Prentiss fine sandy loam, 0 to 2 percent slopes.
Prentiss fine sandy loam, 2 to 5 percent slopes.
Savannah fine sandy loam, 0 to 2 percent slopes.
Savannah fine sandy loam, 2 to 5 percent slopes.
Savannah fine sandy loam, 2 to 5 percent slopes, eroded.
Savannah fine sandy loam, 5 to 8 percent slopes, eroded.
Tilden fine sandy loam, 0 to 2 percent slopes.
Tilden fine sandy loam, 2 to 5 percent slopes.
Tilden fine sandy loam, 2 to 5 percent slopes, eroded.
Tilden fine sandy loam, 5 to 8 percent slopes, eroded.

On these soils seedling mortality is slight and is not a problem. Trees reseed naturally or can be replanted.

Plant competition is slight or moderate. Invasion of some scrubby hardwoods and other undesirable plants may delay natural regeneration or slow the early growth of trees, but it does not prevent an adequate stand of desirable trees from becoming established. Release of desirable trees that grow among undesirable hardwoods may be needed (fig. 10).

Equipment limitation is slight, though heavy rains may delay operations for a few days. Special preparation of the site generally is not needed.

The erosion hazard depends on the slope and is slight or moderate. It is slight on slopes of 0 to 8 percent and moderate on slopes of 8 to 12 percent. On slopes of more than 8 percent, careful location of roads and landings is needed.

The windthrow hazard is generally slight, but in some severely eroded areas, it is moderate because the fragipan restricts the roots to a thin zone. Practices that control diseases, insects, and other pests are not needed.

WOODLAND SUITABILITY GROUP 4

This group consists of nearly level, alluvial, medium-textured soils. Most of these soils are poorly drained or somewhat poorly drained. Permeability and available water capacity are moderate, and the water table is at or near the surface during winter and spring. These soils are subject to frequent floods that last for a moderately long time. The soils are—

Bibb soils.
Bibb and Chastain fine sandy loams.
Mantachie, Bibb, and Iuka soils.

Figure 10.—Large oaks have been girdled to allow natural reseeding of pines.

These soils are naturally better suited to hardwoods than to pines. Consequently, open fields that have been planted to loblolly pines generally revert to hardwoods after the planted pines have been harvested.

Seedling mortality is generally slight, but it is moderate if light is not adequate and flooding is severe.

Plant competition is moderate or severe and depends on the management and the kind of harvesting. In places moderate competition delays regeneration and slows the initial growth of trees, but it does not prevent an adequate stand of desirable trees from becoming established. Where competition is severe, restocking of desirable trees is helped by burning, spraying with chemicals, clearing, disking, and other methods of preparing seedbeds.

Equipment limitation is severe because during winter and spring these soils may be flooded for periods of 3 to 6 months. The hazard of windthrow is slight, even though strong winds are likely to uproot some trees when the soils are saturated in wet periods.

WOODLAND SUITABILITY GROUP 5

This group consists of medium-textured, poorly drained soils that have a fragipan or a claypan. These soils are nearly level. Permeability is slow above the pan and very slow in it. The available water capacity is low, and during winter and spring, the water table is at or near the surface. The soils are—

Leaf fine sandy loam.
Mashulaville loam.
Mashulaville fine sandy loam, terrace.

On these soils sweetgums grow to pulpwood size, but they are subject to dieback and generally do not grow to maturity, probably because the only available moisture is limited to the thin root zone above the pan.

Seedling mortality is slight or moderate. Although trees reseed naturally, some replanting is needed in the open spaces.

Plant competition is severe and frequently prevents a good stand of desirable trees from becoming established. Restocking of desirable trees is helped by burning, spraying with chemicals, disking, and other methods of preparing seedbeds.

The use of equipment is severely limited because the soils are wet for long periods in winter and spring.

Since the soils are nearly level, the erosion hazard is slight. The hazard of windthrow is severe because the root zone is thin above the pan.

WOODLAND SUITABILITY GROUP 6

This group consists of alluvial soils that have a medium-textured surface layer and subsoil. These soils are nearly level and moderately well drained or somewhat poorly drained. Permeability and available water capacity are moderate. The water table is near the surface in winter and spring. Frequent floods of short duration are likely. The soils are

Iuka fine sandy loam.
Iuka soils, local alluvium.
Mantachie fine sandy loam.
Mantachie soils, local alluvium.

Seedling mortality on these soils is slight or moderate. It is slight where light is adequate and flooding is not severe.

Plant competition is moderate or severe and depends on the management and the kind of harvest. In places competing plants delay natural regeneration and slow the initial growth of trees, but they do not prevent an adequate stand of desirable trees from becoming established. Where competition is severe, restocking of desirable trees is encouraged by burning, spraying with chemicals, clearing, disking, and other methods of preparing seedbeds.

Because of flooding, the use of equipment may be restricted for periods of 1 to 3 months in winter and spring.

Although the windthrow hazard is only slight, some trees are likely to be uprooted by strong winds in wet periods when the soils are saturated.

WOODLAND SUITABILITY GROUP 7

This group consists of well-drained to somewhat excessively drained, coarse-textured soils. These soils range from nearly level to steep. Permeability is rapid, and the available water capacity is low. The soils are—

Eustis loamy sand, terrace.
Eustis loamy sand, 2 to 5 percent slopes.
Eustis loamy sand, 5 to 8 percent slopes.
Eustis loamy sand, 8 to 12 percent slopes.
Eustis loamy sand, 12 to 35 percent slopes.

Seedling mortality on these sandy, droughty soils is perhaps the greatest hazard, but in years of normal rainfall, it is generally slight, and less than 25 percent of the seedlings die. In years of low rainfall, however, seedling mortality is moderate and replanting is needed for adequate restocking.

Plant competition is moderate, but stands can be restocked by replanting desirable trees if competing plants are controlled. Where enough seed is available, the stands restock by natural reseeding, but the growth of the trees may be delayed by competing plants.

The use of equipment is only slightly limited on slopes of 12 percent or less, but on steeper slopes it is moderately limited because the soils are loose and sandy.

The erosion hazard is moderate on slopes of more than 12 percent. The windthrow hazard is slight and is not a problem.

WOODLAND SUITABILITY GROUP 8

This group consists of somewhat poorly drained, medium-textured soils that have a fragipan. These soils are nearly level or gently sloping. Permeability is moderate above the fragipan and very slow in it. The available water capacity is moderate to low. The soils are—

Pheba fine sandy loam, 0 to 2 percent slopes.
Pheba fine sandy loam, 2 to 5 percent slopes.
Stough fine sandy loam, 0 to 2 percent slopes.

If rainfall is normal, seedling mortality is slight. Less than 25 percent of the planted seedlings die, and replanting is not needed for satisfactory restocking. If rainfall is low, the loss of planted stock is much greater and replanting is needed to fill the open spaces.

Plant competition is moderate. Competing plants frequently delay natural regeneration of trees and slows initial growth, but they do not prevent stands of desirable trees from becoming established. Practices to control diseases, insects, or other pests are not needed.

The use of equipment is moderately limited in winter and spring because the soils are wet, but erosion is not a problem on these nearly level or gently sloping soils.

The windthrow hazard is moderate because, above the fragipan, the soils are wet and the roots are restricted to a thin zone.

WOODLAND SUITABILITY GROUP 9

The only soil in this suitability group is Johnston loam. It occurs on first bottoms and is medium textured, very poorly drained, and high in organic-matter content. Frequent flooding leaves water standing on the surface much of the time. Permeability is moderate, and the supply of available water is good to excessive.

Seedling mortality is slight on this soil, and in most places desirable trees restock satisfactorily from the first planting. If plant competition is not severe and enough seeds are available, a stand of desirable trees restocks naturally.

Plant competition is moderate to severe and depends on the management and the kinds of harvest. In places moderate competition delays natural regeneration and slows the initial growth of trees, but it does not prevent an adequate stand of desirable trees from becoming established. Where competition is severe, restocking of desirable trees is helped by burning, spraying with chemicals, clearing, disking, and using other methods of preparing seedbeds.

The use of equipment is severely limited because water is near the surface or standing on it much of the year. Drainage is needed in some places, but outlets may not be available, and suitable ones are costly to build.

The windthrow hazard is slight. Individual trees that are released on all sides probably will remain standing. Stands can be harvested without endangering the remaining trees unless winds are exceptionally high.

WOODLAND SUITABILITY GROUP 10

This group consists of sloping to very steep soils that vary in texture. Permeability ranges from slow to rapid, and the available water capacity is moderate or low. The root zone ranges from thin to thick. The soils are—

Lauderdale stony fine sandy loam, 5 to 8 percent slopes.
Lauderdale stony fine sandy loam, 12 to 45 percent slopes.
Lauderdale-Boswell complex, 5 to 12 percent slopes.
Lauderdale-Boswell complex, 17 to 45 percent slopes.
Lauderdale-Eustis complex, 8 to 12 percent slopes.
Lauderdale-Eustis complex, 12 to 45 percent slopes.

Seedling mortality is moderate or severe and is perhaps the greatest problem in managing woodland on these soils. About 25 to 50 percent of the planted stock generally dies if rainfall is low, and replanting of entire areas may be needed.

Plant competition on these soils is severe, but restocking of desirable trees can be helped by burning, spraying with chemicals, disking, and using other methods of preparing seedbeds.

Equipment limitations are generally slight on slopes of 12 percent or less, but some kinds of equipment are moderately limited by sandy soils, by stones, or by steep slopes.

The hazard of erosion is slight on slopes of less than 12 percent and is moderate on steeper slopes. The windthrow hazard is slight to severe and depends on the thickness of the root zone.

WOODLAND SUITABILITY GROUP 11

This group consists of somewhat excessively drained or excessively drained, coarse-textured, alluvial soils that are nearly level and subject to flooding. Permeability is rapid, and the available water capacity is low. The soils are—

Bruno loamy fine sand.
Sandy alluvial land.

Seedling mortality is moderate or severe. At the time of planting, plans should be made to interplant the open spaces during the third year.

Plant competition is moderate or severe. Control of competing hardwoods, shrubs, and vines is needed.

Equipment limitation is moderate because flooding may prevent the use of machines for 1 to 3 months each year. The use of some equipment is limited because these soils are loose and sandy.

The hazard of windthrow is slight, and individual trees can be expected to remain standing if they are released on all sides.

WOODLAND SUITABILITY GROUP 12

This group consists of somewhat poorly drained or moderately well drained, acid, clayey or loamy soils. These soils are nearly level to strongly sloping. In many places they are underlain by marl or chalk. Infiltration and permeability are slow, and the available water capacity is high. The soils are—

Eutaw clay, deep.
Eutaw-Vaiden clays, deep.
Vaiden clay, deep, 0 to 2 percent slopes.
Vaiden clay, deep, 2 to 5 percent slopes.
Vaiden clay, deep, 2 to 5 percent slopes, eroded.
Vaiden clay, deep, 5 to 8 percent slopes, eroded.
Vaiden clay, deep, 8 to 12 percent slopes, eroded.
Vaiden and Oktibbeha silt loams, deep, 0 to 2 percent slopes.
Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes.
Vaiden and Oktibbeha silt loams, deep, 5 to 8 percent slopes.
Vaiden and Oktibbeha silt loams, deep, 8 to 12 percent slopes.

Seedling mortality is generally slight, for in most places less than 25 percent of the planted stock dies.

Plant competition is also moderate. Competing plants delay natural regeneration and slow initial growth, but they do not prevent adequate stands of desirable trees from becoming established.

The use of equipment is moderately limited, and conventional equipment can be used only in dry periods.

The windthrow hazard is slight, for individual trees can be expected to remain standing if they are released on all sides.

WOODLAND SUITABILITY GROUP 13

Houlka clay is the only soil in this group. It is acid, alluvial, nearly level, and somewhat poorly drained. Infiltration and permeability are slow. The available water capacity is high.

Seedling mortality is moderate on this soil. At the time of planting, plans should be made to interplant the openings during the third year.

Plant competition is severe, but restocking of desirable trees can be helped by burning, spraying with chemicals, clearing, disking, and using other methods of preparing seedbeds.

The use of equipment is moderately or severely limited by wetness. Conventional equipment can be be used only in dry periods.

Erosion is only a slight hazard. Windthrow is also a slight hazard, and individual trees can be expected to remain standing if they are released on all sides.

WOODLAND SUITABILITY GROUP 14

This group consists of thin, alkaline, sandy to clayey soils that are underlain by chalk and are moderately well drained. These soils are nearly level to strongly sloping. Infiltration and permeability are slow. The available water capacity is moderate to high. The soils are—

Gullied land, alkaline.
Sumter clay, 2 to 5 percent slopes, eroded.
Sumter clay, 2 to 5 percent slopes, severely eroded.
Sumter clay, 5 to 8 percent slopes, eroded.
Sumter clay, 5 to 12 percent slopes, severely eroded.

Seedling mortality is moderate or severe and perhaps is the greatest problem in managing these soils as woodland. From 25 to 50 percent of the planted stock generally dies, but if rainfall is low, the loss may be so great that the replanting of entire areas is needed.

Plant competition is severe, but restocking of desirable trees can be helped by burning, spraying with chemicals, clearing, disking, and using other methods of preparing seedbeds.

The use of equipment is moderately or severely limited because these soils are rough and periodically wet. Conventional equipment can be used only in dry periods.

In some places intensive management is needed to control erosion because runoff is rapid, infiltration is slow, and slopes are strong.

The windthrow hazard is slight or severe and depends on the thickness of the root zone over the chalk layer.

WOODLAND SUITABILITY GROUP 15

Only West Point clay is in this group. This soil is alluvial, nearly level, neutral to alkaline, and moderately well drained. Infiltration and permeability are slow, and the available water capacity is high.

Seedling mortality generally is slight on this soil, and less than 25 percent of the planted stock dies.

Plant competition is severe, but restocking of desirable trees can be helped by clearing, disking, spraying with chemicals, and using other methods of preparing seedbeds.

Equipment limitation is moderate or severe, and conventional equipment can be used only in dry periods.

The hazard of erosion is slight. The windthrow hazard is also slight, and individual trees can be expected to remain standing if they are released on all sides.

WOODLAND SUITABILITY GROUP 16

This group consists of neutral or mildly alkaline, clayey soils that occur on uplands and are moderately well drained. These soils are nearly level or gently sloping. Infiltration and permeability are slow, and the available water capacity is high. The soils are—

Houston clay, 0 to 2 percent slopes.
Houston clay, 2 to 5 percent slopes.

Eastern redcedar is suited to these soils, but they normally are not used for trees. They are extensively used for crops and grasses.

Seedling mortality generally is slight, and less than 25 percent of the planted stock dies.

Plant competition is severe, but restocking of desirable trees can be helped by burning, spraying with chemicals, clearing, disking, and using other methods of preparing seedbeds.

Equipment limitation is moderate or severe. The use of conventional forestry equipment is restricted to dry periods.

Windthrow is only a slight hazard, and individual trees can be expected to remain standing if they are released on all sides.

WOODLAND SUITABILITY GROUP 17

Only Gullied land, acid, is in this group. It occurs on the uplands and is medium textured or coarse textured. Permeability and infiltration are moderate to rapid. Drainage and available water capacity are variable.

Seedling mortality is moderate or severe. Replanting is needed in open spaces, and mulching is needed in many of the gullied areas.

Plant competition is generally slight and does not prevent an adequate stand of desirable trees from becoming established. To permit the growth of desirable trees in some areas, control of the fairly dense vines, brush, and scrubby hardwoods is needed.

The use of equipment is severely limited and depends on the width and depth of the gullies.

The erosion hazard is severe because the slopes are steep and runoff is rapid. In some areas erosion can be lessened by intensive management.

The hazard of windthrow is slight to moderate and depends on the thickness of the root zone.

Wildlife [4]

This subsection first discusses the kinds of wildlife in Clarke County and the food and cover suited to them, and then it describes the soil associations as wildlife habitats.

Food and cover

The kinds and number of wildlife in an area depend on the food and cover in the area. Some kinds of wildlife live on woodland, some on farmland or wetland, and some on a combination of these. All of the soils in Clarke County furnish food and cover for one or more kinds of wildlife.

Bobwhite (quail).—These birds need open and semiopen areas in which their food is near vegetation that protects them from predators and bad weather. Farmland that produces row crops is good. Quail eat the seed and other parts of plants; in warm weather they eat insects. Choice food from woody plants are acorns, beechnuts, blackberries, black cherries, flowering dogwood seeds, mulberries, pine seeds, and sweetgum seeds. Also choice are browntop millet, corn, cowpeas, soybeans, partridgepeas, and bicolor, Kobe, Korean, and common lespedezas. The seeds from ragweed and beggartick are also favorite foods.

Deer.—To survive, deer need plenty of water and at least 500 acres of woodland. They eat woody plants, cultivated crops, and many kinds of native plants. Choice foods are acorns, greenbrier, honeysuckle, clover, corn, cowpeas, oats, rescuegrass, and wheat.

Doves.—Doves need water daily and open fields that are not thickly covered. They eat the seeds of woody plants, cultivated crops, and weeds. Choice foods are

[4] EDWARD G. SULLIVAN, biologist, Soil Conservation Service, helped write this subsection.

browntop millet, corn, croton, grain sorghum, panicgrass, pokeberry, ragweed, sunflower, wheat, and the seeds of pine and sweetgum.

Ducks.—Ducks live on ponds and other open water near woodland or near cultivated fields. They also live on wetland that always has some open water available and is flooded in winter. Ducks eat nuts, seed, grass, and aquatic plants and animals. Choice nuts are acorns and beechnuts, and a choice grass is browntop millet. Corn, Japanese millet, and smartweed are also favorite foods.

Rabbits.—Rabbits live only in places where they can find adequate cover. Good cover is furnished by blackberry, multiflora rose, sericea lespedeza, and any low-growing bushes, shrubs, or annual weeds. Rabbits eat mainly grass, clover, grain, and bark.

Squirrels.—A few acres of woodland can support squirrels if there are hardwoods in the stands. Choice foods are acorns, beechnuts, blackgum seeds, black cherries, dogwood seeds, hickory nuts, mulberries, maple seeds, pecans, and pine seeds. Corn is also a favorite food.

Nongame birds.—Many kinds of nongame birds live in Clarke County, for the county has many kinds of habitats. Each kind of bird lives where it finds the most suitable food and cover. Some of the birds eat only insects; others eat insects and fruits; and several eat insects, fruits, and nuts.

Fish.—The principal game fish in the ponds and streams are bass, bluegills and other sunfish, and channel catfish. The amount of fish in a pond depends upon the amount of available food, and the food in turn, depends upon the fertility of the watershed and of the pond bottom. Most ponds needs additions of lime and fertilizer if they are to produce a large amount of fish. Bluegills and most of the sunfish eat aquatic worms, insects, and insect larvae. Bass and catfish eat small fish, frogs, crayfish, and other aquatic animals.

Managing soil associations for wildlife

In the following paragraphs the suitability of the soils as wildlife habitats is discussed by soil associations (see general soil map at the back of this report). Ways of improving the habitats are described. More complete descriptions of the soil associations are given in the section "General Soil Map."

(1) VAIDEN-EUTAW-SUMTER-HOUSTON ASSOCIATION

This association consists of moderately well drained to poorly drained, nearly level heavy clays that are underlain by alkaline clay or chalk. It makes up about 8 percent of the county. Much of the association is locally called hogwallow prairie, and only a small acreage is used for row crops. Most of the association is in timber and pasture.

This association generally is not suited to game common in cultivated areas. The forest and pasture are poor habitats for quail and doves. Rabbits are common, however, around the edges of pastures where there is enough cover for their protection. Their number can be increased by allowing natural cover to grow in and around the pastures.

Since about 60 percent of this association is wooded, it is suited to game that live in the forest. The association could support more deer, squirrels, and turkeys, for some of its soils are suited to hardwoods. Oak, hickory, and other hardwoods can be grown along small streams and other drainageways. These trees should be encouraged so that the habitats for the deer, squirrels, and turkeys are improved. If openings 2 to 10 acres in size are made in the large forests, and are seeded to a permanent sod plant, the number of deer and turkeys will be increased.

Small ponds have been dug in this association, but these ponds are too small to be stocked with game fish. Ponds made by building levees to impound the water are not suited to the soils in this association.

(2) BIBB-MANTACHIE-IUKA ASSOCIATION

This association consists of poorly drained to moderately well drained, alluvial, sandy soils on the bottom lands of the larger streams. It accounts for about 22 percent of the county. It is mostly in hardwoods suitable for timber, but a few, small open areas are cultivated.

This association is well suited to game that lives in forest, but quail, rabbits, and other game accustomed to cultivated areas are scarce. Oak, hickory, beech, maple, dogwood, and other hardwoods provide choice foods for deer, turkeys, and squirrels. If the forest is managed well, a good supply of food is insured. By clearing small areas in the larger forests, and seeding them to white clover, grain, and grass, food for wildlife is provided in winter.

Although a few ducks live along the larger streams, natural habitats for these fowl are scarce on this soil association. Most of the natural habitats are near beaver ponds or wetland that is flooded in winter. Feeding areas can be made in a few other places that can be flooded from October to March. Browntop millet and Japanese millet are duck foods that grow well on the soils of this association.

(3) SAVANNAH-ORA-PHEBA-STOUGH; (4) RUSTON-ORANGEBURG; AND (5) RUSTON-SHUBUTA-ORA-BOSWELL ASSOCIATIONS

These soils associations consist of well-drained to somewhat poorly drained sandy loams on gentle slopes, steep side slopes, and ridgetops. The associations amount to about 69 percent of the county. Most of the acreage is woodland, mainly of pines and mixed hardwoods. The hardwoods generally grow along the streams and drainageways. A considerable number of small- to medium-sized farms are scattered through these associations.

These associations are suited to game that generally lives in cultivated areas and to game that lives in forests. Quail, doves, and rabbits usually stay on open farmland and in the woods adjacent to it. They are less common in areas that are mostly in pasture. Food for quail is supplied by lespedezas, partridge peas, beggartick, several kinds of grasses, and other native plants. Also suitable for quail on these associations are cowpeas, soybeans, bicolor lespedeza, browntop millet, and other cultivated plants. If the native plants are allowed to grow, they provide cover for quail and rabbits. The number of quail and rabbits can be increased on the farms of these associations by encouraging native plants suitable for food and by cultivating other plants. If fields of browntop millet are seeded, doves will be attracted, but now they live only in areas near fields of corn and grain sorghum. These crops supply food for doves in fall and winter.

These soil associations are not so well suited to game that lives in forests as is soil association 2, but their suitability for game can be improved. Not so many stands of hardwoods occur, and the extensive stands of pine sup-

Figure 11.—**Pond suitable for stocking of fish.**

ply only a small amount of food for deer, squirrels, and turkeys. The squirrels must live along narrow stream channels and drainageways where the hardwoods grow. If the forest is well managed, it can support a moderate amount of game. By clearing small areas within the forests, and planting them to hardwoods, mast is supplied and the number of deer, squirrels, and turkeys is increased.

The soils of these associations are suitable for lakes and ponds (fig. 11) that can support many fish if the fertility of these ponds and lakes is maintained. A few migrating ducks rest on the farm ponds, but generally ducks are scarce because hardly any areas in these associations are suitable for making fields that supply food for the ducks.

(6) LAUDERDALE-BOSWELL ASSOCIATION

This association consists of moderately well drained to excessively drained soils on narrow ridgetops and steep side slopes. It amounts to about 1 percent of the county and is in three small areas in the northern part. It is not suitable for cultivation and is mostly in pines.

The habitats for game in this association are generally poor. The game that is found spends most of its time in the better habitats of nearby associations. The association is entirely wooded and is not suitable for game that lives in open, cultivated areas. A small number of squirrels, particularly fox squirrels, live in forests that have hardwoods scattered among the pines.

Engineering Applications [5]

This subsection (1) lists test data for selected soils; (2) describes the two systems of soil classification most commonly used by engineers; (3) gives engineering descriptions and interpretations of the soils in the county; and (4) discusses each soil association and the engineering problems related to its soils.

By using this information, the engineer can—

1. Make soil and land use studies that will aid in selecting and developing industrial, business, residential, and recreational sites.
2. Make preliminary estimates of the engineering properties of soils that will help in planning agricultural drainage systems, farm ponds, irrigation systems, terraces, waterways, and diversion terraces.
3. Make preliminary evaluations of soil and ground conditions that will aid in selecting highway and airport locations and in planning detailed investigations of selected locations.
4. Locate probable sources of gravel, sand, and other construction materials.
5. Correlate performance of engineering structures with soil mapping units, and thus develop information that will be useful in designing and maintaining the structures.
6. Determine the suitability of the soils for cross-country movement of vehicles and construction equipment.
7. Supplement information obtained from other published maps and reports and aerial photographs for the purpose of making maps and reports that will be more useful to engineers.
8. Develop other preliminary estimates for construction purposes pertinent to the particular area.

The soil maps included in this report and the corresponding interpretations are necessarily generalized and, without further tests and sampling, are not sufficient to be used in locating, designing, and constructing specific engineering works.

Most of the information in this subsection is in tables 5, 6, and 7, but information useful to engineers can also be found in other sections of the report, particularly "Descriptions of the Soils" and "Formation and Classification of Soils." Some of the terms used by the agricultural soil scientist may be unfamiliar to the engineer, and some terms may have a special meaning in soil science. These terms are defined in the Glossary at the end of the report.

Soil test data

To help evaluate the soils for engineering purposes, soil samples of the principal soil types of two series were tested according to the procedures approved by the American Association of State Highway Officials (AASHO) (*1*). The test data are listed in table 5.

The engineering soil classifications in table 5 are based on data obtained by mechanical analyses and by tests to determine liquid limit and plastic limit. Mechanical analyses were made by combined sieve and hydrometer methods. The fine material is analyzed by the hydrometer method, and the various grain-sized fractions are calculated on the basis of all the material in the soil sample, including that coarser than 2 millimeters in diameter. The Soil Conservation Service uses the pipette method and excludes from the calculations material coarser than 2 millimeters in diameter. The grain-size percentages obtained by the hydrometer method should not be used in naming soil textural classes.

The test to determine the liquid limit and plastic limit measures the effect of water on the consistence of the soil material. As the moisture content of a clayey soil increases from a very dry state, the material changes from a semisolid to a plastic. As the moisture content is further increased, the material changes from a plastic to a liquid. The plastic limit is the moisture content at which

[5] PAUL A. CALHOUN, agricultural engineer, Soil Conservation Service, helped write this subsection.

TABLE 5.--ENGINEERING

[Tests performed by Mississippi State Highway Department in cooperation with Bureau of Public Roads (BPR),

Soil name	Miss. report number	Depth	Horizon	Maximum dry density	Optimum moisture	Shrinkage factors		
						Limit	Ratio	Volumetric change
		Inches		Lb. per cu. ft.	Percent			
Prentiss fine sandy loam----	402233	9-20	B2	118.8	12.3	15	1.77	15
	402234	26-36	A'22x	119.7	14.0	14	1.77	9
	402235	54-70	C2	101.8	20.2	14	1.79	60
Prentiss fine sandy loam----	402236	11-22	B2	115.2	12.5	15	1.74	21
	402237	28-35	B'21x	110.7	15.6	17	1.73	28
	402238	56-68	C2	106.0	18.0	20	1.53	43
Stough fine sandy loam------	402239	9-17	B2	117.9	12.6	16	1.80	10
	402240	24-34	A'2x	118.4	11.0	--	----	--
	402241	50-65	C1	112.2	14.8	19	1.66	17
Stough fine sandy loam------	402242	11-18	B2	119.1	12.3	14	1.77	20
	402243	31-41	A'2x	116.7	12.4	16	1.75	17
	402244	58-65	C	112.8	14.4	18	1.71	23

1/ Based on AASHO Designation: T 99-57, Method A (1).

2/ Mechanical analysis according to AASHO Designation: T 88-57 (1). Results by this procedure may differ somewhat from results obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHO procedure, the fine material is analyzed by the hydrometer method, and the various grain-size fractions are calculated on the basis of all the material, including that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the

the soil passes from a semisolid to a plastic. The liquid limit is the moisture content at which the soil passes from a plastic to a liquid. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil material is in a plastic condition.

The relationship between moisture and density is important in earthwork. If a constant effort is used to compact soil material at successively high contents of moisture, the density of the compacted material will increase until the optimum moisture content is reached. After that, the density decreases with an increase in moisture content. The highest dry density obtained in the compaction test is called maximum dry density. Generally, a soil is most stable when compacted to about its maximum dry density at the optimum moisture content.

Engineering classification of soils

Most highway engineers classify soil materials according to the AASHO system (*1*). In this system soil materials are classified in seven principal groups. The groups range from A–1, consisting of gravelly soils of high bearing capacity, to A–7, consisting of clayey soils having low strength when wet. Within each group the relative engineering value of the soil material is indicated by a group index number. These numbers range from 0 for the best materials to 20 for the poorest. The group index number is shown in parentheses following the soil group symbol in table 5.

Some engineers prefer to use the Unified soil classification system (*18*), which was developed by the Corps of Engineers, U.S. Army. In this system soil material is identified as coarse grained (eight classes), fine grained (six classes), or highly organic. The classification of the soils tested in the laboratory is given in table 5. In table 6 the classification of each soil in the county has been estimated for both systems.

Properties and engineering interpretations of soils

Some soil properties are of special interest to engineers because they affect the construction and maintenance of roads, airports, pipelines, building foundations, water-storage facilities, erosion control structures, drainage systems, and sewage-disposal systems. The properties most important are permeability to water, strength against shearing, consolidation characteristics, texture, plasticity, and reaction (pH). Also important are relief and the depth to consolidated materials.

Table 6, beginning on page 64, briefly describes the soils in the county and estimates physical properties that apply to engineering. Estimates are based on field observations for some soils and on laboratory tests for others.

Permeability was estimated for the soil in place, without compaction. These estimates were made on the basis

TEST DATA

in accordance with standard procedures of the American Association of State Highway Officials (AASHO) (1)]

Percentage passing sieve--			Percentage smaller than--				Liquid limit	Plasticity index	Classification	
No. 10	No. 40	No. 200	0.05 mm.	0.02 mm.	0.005 mm.	0.002 mm.			AASHO	Unified 3/
100	99	53	50	36	18	16	23	9	A-4(4)---	CL.
100	99	40	35	23	14	11	20	4	A-4(1)---	SM.
100	99	69	68	60	45	37	53	37	A-7-6(17)-	CH.
---	100	66	61	49	24	17	28	11	A-6(7) --	CL.
---	100	62	53	43	28	24	36	18	A-6(9)--	CL.
---	100	61	55	45	33	28	43	27	A-7-6(12)-	CL
100	99	65	54	38	17	12	21	6	A-4(6)---	ML-CL.
100	99	38	35	27	12	9	20	(4/)	A-4(1)---	SM.
100	99	30	28	24	19	17	29	13	A-2-6(0)-	SC.
---	100	46	42	34	22	17	26	12	A-6(3)---	SC.
---	100	44	42	35	25	19	26	11	A-6(2)---	SC.
---	100	45	43	36	29	24	31	16	A-6(4)---	SC.

material coarser than 2 millimeters in diameter is excluded from calculations of grain-size fractions. The mechanical analyses used in this table are not suitable for naming textural classes for soils.

3/ SCS and BPR have agreed to consider that all soils having plasticity indexes within two points from A-line are to be given a borderline classification. An example of borderline classification obtained by this use is ML-CL.

4/ Nonplastic.

of soil structure and porosity and were compared with the results of permeability tests on undisturbed cores of similar material.

The available water capacity, in inches per inch of soil depth, is approximately the amount of capillary water in the soil when it is wet to field capacity. When the soil is air dry, this amount of water will wet the soil material described to a depth of 1 inch and the water does not percolate deeper.

The shrink-swell potential indicates how much a soil changes in volume when its moisture content changes. The data given in table 6 were obtained by volume-change tests or by observing other physical properties of the soil. For example, the soil material of Vaiden clay has a very high shrink-swell potential. This material is very sticky when it is wet, and it shrinks and cracks greatly as it dries. On the other hand, the shrink-swell potential of Eustis loamy sand is low. The soil material is nonplastic when it is wet, and it is loose when it is dry.

In table 7, beginning on page 78, the suitability of the soils for engineering is evaluated, and some features that affect engineering work are listed.

The suitability of soil material for road fill depends on the texture and the natural water content of the soil material. Highly plastic soil materials that have a high natural content of water are rated poor. Highly erodible soils (silts and fine sands) are rated fair or poor because they are difficult to compact, require moderately gentle slopes, and require fast-growing protective vegetation. Houston, Eutaw, Sumter, Vaiden, and other highly plastic, sticky soils should not be used as fill material.

Many soils are ponded or have a high water table for part of each year. Roads across these soils must be constructed on embankment sections, or they must be provided with a good system of underdrains and surface drains. Roads across soils of lowlands that are flooded should be built on a continuous embankment that is several feet higher than the level of the frequent floods.

Below the surface of some soils is a compact layer (fragipan) or a plastic clay layer. A layer of either kind impedes drainage through the soil, and the water that collects above the layer forms a perched water table. The effect of these layers should be considered in roadway design.

Engineering problems in soil associations

In Clarke County engineering problems related to the soils can be conveniently dealt with by discussing the problems in each soil association. Each soil association in the county is described in the section "General Soil Map."

Vaiden-Eutaw-Sumter-Houston association. -This association consists of moderately well drained to poorly drained, clayey soils on the nearly level or gently sloping prairie in the southern half of the county. It is dissected by shallow, narrow drainageways. Surface drainage is slow, and the water table is periodically high.

TABLE 6.--BRIEF DESCRIPTION OF THE SOILS

[Dashed lines indicate that

Map symbol	Soil name	Description of soil and site	Depth from surface	Engineering classification	
				Unified	AASHO
			In.		
AnA	Angie fine sandy loam, 0 to 2 percent slopes.	Somewhat poorly drained soils that are on uplands and have a thin fine sandy loam surface layer and a sandy clay loam to clay loam subsoil underlain by thin beds of clay and sandy clay.	0-6	SM or SC---	A-4---------
AnB	Angie fine sandy loam, 2 to 5 percent slopes.		6-19	CL---------	A-6---------
AnC2	Angie fine sandy loam, 5 to 8 percent slopes, eroded.		19-54	CL or CH---	A-7---------
Bb	Bibb soils.	Poorly drained, frequently flooded soils in recent alluvium that washed from Coastal Plain uplands.	Bibb:		
Bc	Bibb and Chastain fine sandy loams.		0-40	SM or SC---	A-4 or A-6--
			Chastain:		
			0-12	SM or SC---	A-4---------
			12-20	CL or CH---	A-6 or A-7--
BfB	Boswell fine sandy loam, 2 to 5 percent slopes.	Moderately well drained soils that are on uplands and have a fine sandy loam or sandy clay loam surface layer and a plastic clay subsoil; substratum is acid clay from the Coastal Plain.	0-4	SM or SC---	A-4---------
BfB2	Boswell fine sandy loam, 2 to 5 percent slopes, eroded.		4-38	CH---------	A-7---------
BfC	Boswell fine sandy loam, 5 to 8 percent slopes.				
BfC2	Boswell fine sandy loam, 5 to 8 percent slopes, eroded.				
BfD	Boswell fine sandy loam, 8 to 12 percent slopes.				
BfD2	Boswell fine sandy loam, 8 to 12 percent slopes, eroded.				
BoC3	Boswell sandy clay loam, 5 to 8 percent slopes, severely eroded.				
BoD3	Boswell sandy clay loam, 8 to 12 percent slopes, severely eroded.				
BtD	Boswell, Shubuta, and Cuthbert fine sandy loams, 5 to 12 percent slopes.	Cuthbert: Moderately well drained soils that are on uplands and have a fine sandy loam surface layer and a sandy clay loam to plastic clay subsoil underlain by sand and clay from the Coastal Plain. (For Shubuta and Boswell see the fine sandy loams of those series.)	0-8	SM or SC---	A-4---------
BtF	Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes.		8-24	CL or SC---	A-6 or A-7--
			24-36	SP and CL--	A-2 and A-6-
Bu	Bruno loamy fine sand.	Excessively drained soil that has a loamy fine sand surface layer and a loamy sand subsoil.	0-15	SM---------	A-2---------
			14-40	SM---------	A-2---------
CaA	Cahaba fine sandy loam, 0 to 2 percent slopes.	Well-drained soils that are on stream terraces and have a fine sandy loam surface layer and a clay loam to fine sandy loam subsoil.	0-10	SM or SC---	A-4---------
CaB	Cahaba fine sandy loam, 2 to 5 percent slopes.		13-34	SC---------	A-6---------
CaB2	Cahaba fine sandy loam, 2 to 5 percent slopes, eroded.		34-40	SM or SC---	A-4---------
CaD2	Cahaba fine sandy loam, 5 to 12 percent slopes, eroded.				

See footnote at end of table.

AND ESTIMATED PHYSICAL PROPERTIES

estimates were not made]

USDA texture	Percentage passing sieve--			Permeability	Available water capacity	Reaction	Structure	Shrink-swell potential
	No. 4	No. 10	No. 200					
				In. per hr.	In. per in. of soil	pH		
Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.5	Granular---	Low.
Clay loam to sandy clay loam.	100	100	60-70	0.20-0.80	0.20	5.0-6.0	Subangular blocky.	Moderate.
Sandy clay-	100	100	50-60	0.20-0.80	0.17	5.0-6.0	Massive----	Moderate.
Fine sandy loam.	100	100	30-50	---------	----	4.5-5.5	----------	Low.
Fine sandy loam.	100	100	30-50	---------	----	4.5-5.5	----------	Low.
Sandy clay-	100	100	50-60	---------	----	4.5-5.5	----------	Moderate.
Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.5	Granular---	Low.
Clay-------	100	100	65-75	---------	0.14	4.5-5.5	Angular and sub-angular blocky.	High.
Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.5	----------	Low.
Clay loam to sandy clay.	100	100	60-70	0.20-0.80	0.20	4.5-5.5	----------	Moderate.
Sand and clay.	(1/)	(1/)	(1/)	(1/)	(1/)	4.5-5.5	----------	Low or moderate.
Loamy fine sand.	100	100	15-25	5.00-10.00	0.06	4.5-5.5	Granular--	Low.
Loamy sand-	100	100	15-25	5.00-10.00	0.06	4.5-5.5	Structure less.	Low.
Fine sandy loam.	100	100	35-45	2.50-5.00	0.13	5.0-5.5	Granular--	Low.
Sandy clay loam.	100	100	40-50	2.50-5.00	0.14	-------	Subangular blocky.	Moderate.
Fine sandy loam.	100	100	35-45	5.00-10.00	0.13	-------	Subangular blocky.	Low.

TABLE 6.--BRIEF DESCRIPTION OF THE SOILS

Map symbol	Soil name	Description of soil and site	Depth from surface	Engineering classification	
				Unified	AASHO
			In.		
EsB	Eustis loamy sand, 2 to 5 percent slopes.	Excessively drained soils that are on uplands and have a loamy sand surface layer and a loamy sand to sand subsoil.	0-16	SM--------	A-2----
			16-42	SP or SM--	A-2 or A-3--
EsC	Eustis loamy sand, 5 to 8 percent slopes.				
EsD	Eustis loamy sand, 8 to 12 percent slopes.				
EsF	Eustis loamy sand, 12 to 35 percent slopes.				
Et	Eustis loamy sand, terrace.				
Eu	Eutaw clay, deep.	Poorly drained, acid soils that are on uplands and have a clay surface layer and a plastic clay subsoil and substratum.	0-36	CH--------	A-7----
Ev	Eutaw-Vaiden clays, deep.				
FfA	Flint fine sandy loam, loamy substratum, 0 to 2 percent slopes.	Moderately well drained soils that are on terraces and have a fine sandy loam surface layer and a clay loam subsoil.	0-10	SM or SC--	A-4----
			10-36	CL--------	A-6----
FfB	Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes.				
			36-45	SC--------	A-6----
Ga	Gullied land, acid.	Severely eroded sandy soils through which gullies have cut deeply into the sand and clay substratum.	-----	----------	-------
Gk	Gullied land, alkaline.	Severely eroded clays through which gullies have cut deep into the alkaline clay substratum.	0-48	CH--------	A-7----
Ho	Houlka clay.	Somewhat poorly drained soil that is clay throughout the profile; in recent alluvium that washed from prairie clays.	0-32	CH--------	A-7----
HuA	Houston clay, 0 to 2 percent slopes.	Moderately well drained soils that are on the prairie and have a surface layer and subsoil of moderately alkaline clay.	0-6	CH-------	A-7----
			6-38	CH-------	A-7----
HuB	Houston clay, 2 to 5 percent slopes.				
Ik	Iuka fine sandy loam.	Moderately well drained soils that have a fine sandy loam surface layer and a loam to fine sandy loam subsoil; in recent alluvium that washed from the Coastal Plain.	0-10	SM or SC-	A-4----
Iu	Iuka soils, local alluvium.		10-40	CL-------	A-4 or A-6.

AND ESTIMATED PHYSICAL PROPERTIES--Continued

USDA texture	Percentage passing sieve--			Permeability	Available water capacity	Reaction	Structure	Shrink-swell potential
	No. 4	No. 10	No. 200					
				In. per hr.	In. per in. of soil	pH		
Loamy sand--	100	100	15-25	5.00-10.00	0.06	4.5-5.5	Granular--	Low.
Sand--------	100	100	5-10	5.00-10.00	0.06	-------	Structure-less.	Low.
Clay--------	100	100	70-90	0.05- 0.20	0.29	4.5-6.0	Granular or sub-angular blocky.	Very high.
Fine sandy loam.	100	100	35-45	0.80- 2.50	0.16	4.5-5.0	Granular--	Low.
Clay loam--	100	100	60-70	0.20- 0.80	0.21	4.5-5.5	Angular and sub-angular blocky.	Low or moderate.
Sandy clay loam.	100	100	40-50	2.50- 5.00	0.14	5.5	Angular and sub-angular blocky.	Low.
----------	---	---	-----	----------	----	------	----------	
Clay------	100	100	70-95	0.05- 0.20	0.29	7.0-8.4	Massive--	High.
Clay------	100	100	70-95	0.05- 0.20	0.26	4.5-6.5	Granular to massive.	High.
Clay-----	100	100	70-90	0.05- 0.20	0.24	6.6-8.4	Granular--	High.
Clay-----	100	100	70-90	0.00- 0.05	0.24	7.0-8.4	Subangular blocky.	Very high.
Fine sandy loam.	100	100	40-50	2.50- 5.00	0.14	5.0-5.5	Granular--	Low.
Loam to fine sandy loam.	100	100	50-60	0.80- 2.50	0.16	5.0-5.5	Structure-less.	Low.

TABLE 6.--BRIEF DESCRIPTION OF THE SOILS

Map symbol	Soil name	Description of soil and site	Depth from surface	Engineering classification	
				Unified	AASHO
			In.		
Jo	Johnston loam.	Poorly drained soil that has a loam surface layer high in organic-matter content and is underlain by fine sandy loam; in recent alluvium that washed from the Coastal Plain.	0-26 26-42	ML or OL--- SM or SC---	A-4 or A-5. A-4-----
LaC	Lauderdale stony fine sandy loam, 5 to 8 percent slopes.	Excessively drained soils that are on uplands and have a stony fine sandy loam surface layer underlain by beds of sandstone.	0-9	SM or SC---	A-4-----
LaF	Lauderdale stony fine sandy loam, 12 to 45 percent slopes.		9-42	----------	--------
LbD	Lauderdale-Boswell complex, 5 to 12 percent slopes.	Excessively drained to moderately well drained soils that are on uplands and have a sandy loam to sand surface layer underlain by sand to clay or by horizontal beds of sandstone.	-----	----------	--------
LbF	Lauderdale-Boswell complex, 17 to 45 percent slopes.				
LeD	Lauderdale-Eustis complex, 8 to 12 percent slopes.				
LeF	Lauderdale-Eustis complex, 12 to 45 percent slopes.				
Lf	Leaf fine sandy loam.	Poorly drained soil that is on stream terraces and has a fine sandy loam surface layer and a clay subsoil; in old alluvium that washed from uplands.	0-10 10-40	SM or SC--- CH or MH---	A-4----- A-7-----
Ma	Mantachie fine sandy loam.	Somewhat poorly drained soils that have a fine sandy loam surface layer and a fine sandy loam to loam subsoil; in recent alluvium that washed from the Coastal Plain.	0-14	SM or SC---	A-4-----
Mc	Mantachie soils, local alluvium.		14-42	ML or CL---	A-4 or A-6---
Mn	Mantachie, Bibb, and Iuka soils.	Moderately well drained to poorly drained soils that have a fine sandy loam surface layer and a sandy loam to loam subsoil; in recent alluvium that washed from uplands.	0-10 10-40	SM or SC--- ML or CL---	A-4 ----- A-4 or A-6---
Ms	Mashulaville loam.	Poorly drained soil that is on uplands and has a loam surface layer and a subsoil of fine sandy loam over a pan.	0-5 5-26 26-42	CL--------- ML or CL--- CL---------	A-4 or A-6. A-4 or A-6--- A-6-----

AND ESTIMATED PHYSICAL PROPERTIES--Continued

USDA texture	Percentage passing sieve--			Permeability	Available water capacity	Reaction	Structure	Shrink-swell potential
	No. 4	No. 10	No. 200					
				In. per hr.	In. per in. of soil	pH		
Loam--------	100	100	60-70	0.80-2.50	0.20	>4.5	Granular--	Low or moderate.
Fine sandy loam.	100	100	35-45	2.50-5.00	0.13	4.5-5.0	Granular--	Low.
Stony sandy loam.	100	70-90	35-45	0.80-2.50	0.13	4.5-5.5	Granular--	Low.
Sandstone---	---	---	-----	---------	----	-------	Platy-----	
----------	---	---	-----	---------	----	-------	----------	
Fine sandy loam.	100	100	35-45	0.80-2.50	0.14	4.5-5.5	Granular--	Low.
Clay--------	100	100	65-80	0.05-0.20	0.20	-------	Angular and sub-angular blocky.	High.
Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.5	Granular	Low.
Fine sandy loam to loam.	100	100	50-60	0.80-2.50	0.12	5.0-5.5	Subangular blocky.	Low.
Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.5	Granular--	Low.
Fine sandy loam to loam.	100	100	50-60	0.80-2.50	0.12	5.0-5.5	----------	Low or moderate.
Loam-------	100	100	55-65	0.80-2.50	0.15	4.5-5.5	Granular--	Low.
Fine sandy loam to loam.	100	100	50-60	0.20-0.80	0.14	5.0-5.5	Subangular blocky.	Low or moderate.
Clay loam--	100	100	60-70	0.05-0.20	0.12	5.0-5.5	Massive---	Moderate.

TABLE 6.--BRIEF DESCRIPTION OF THE SOILS AND

Map symbol	Soil name	Description of soil and site	Depth from surface	Engineering classification	
				Unified	AASHO
			In.		
Mt	Mashulaville fine sandy loam, terrace.	Poorly drained soil that is on stream terraces and has a fine sandy loam surface layer and a sandy loam or fine sandy loam subsoil; in alluvium washed from uplands.	0-6	SM or SC--	A-4-----
			6-11	SM or SC--	A-4-----
			11-42	SM or SC--	A-4-----
OfA	Ora fine sandy loam, 0 to 2 percent slopes.	Moderately well drained soils that are on uplands and have a fine sandy loam surface layer and a loam to sandy loam subsoil underlain by a sandy loam fragipan; substratum consists of unconsolidated beds of sandy loam to sandy clay loam.	0-5	SM or SC--	A-4-----
OfB	Ora fine sandy loam, 2 to 5 percent slopes.		5-24	SC------ -	A-6-----
OfB2	Ora fine sandy loam, 2 to 5 percent slopes, eroded.		24-50	SC--------	A-6-----
OfC	Ora fine sandy loam, 5 to 8 percent slopes.				
OfC2	Ora fine sandy loam, 5 to 8 percent slopes, eroded.				
OfD2	Ora fine sandy loam, 8 to 12 percent slopes, eroded.				
OrC	Orangeburg fine sandy loam, 5 to 8 percent slopes.	Well-drained soils that are on uplands and have a fine sandy loam surface layer and a subsoil of clay loam over loam to loamy sand.	0-11	SM or SC--	A-4------
OrC2	Orangeburg fine sandy loam, 5 to 8 percent slopes, eroded.		11-26	CL--------	A-6------
OrC3	Orangeburg fine sandy loam, 5 to 8 percent slopes, severely eroded.		26-60	SM or SC--	A-4------
OrD	Orangeburg fine sandy loam, 8 to 12 percent slopes.				
OrD3	Orangeburg fine sandy loam, 8 to 12 percent slopes, severely eroded.				
OrE	Orangeburg fine sandy loam, 12 to 17 percent slopes.				
OrF	Orangeburg fine sandy loam, 17 to 35 percent slopes.				
PhA	Pheba fine sandy loam, 0 to 2 percent slopes.	Somewhat poorly drained soils that are on uplands and have a fine sandy loam surface layer and a subsoil of loam underlain by a sandy loam to loam fragipan.	0-7	SM or SC--	A-4----
PhB	Pheba fine sandy loam, 2 to 5 percent slopes.		7-15	ML or CL--	A-4 or A-6.
			15-29	ML or CL--	A-4 or A-6.
PrA	Prentiss fine sandy loam, 0 to 2 percent slopes.	Moderately well drained soils that are on uplands and have a fine sandy loam surface layer and a subsoil of loam to clay loam over a clay loam fragipan; substratum is sandy loam to clay loam.	0-11	SM or SC--	A-4-----
PrB	Prentiss fine sandy loam, 2 to 5 percent slopes.		11-22	CL--------	A-6-----
			22-68	CL--------	A-6-----

ESTIMATED PHYSICAL PROPERTIES--Continued

USDA texture	Percentage passing sieve--			Permeability	Available water capacity	Reaction	Structure	Shrink-swell potential
	No. 4	No. 10	No. 200					
				In. per hr.	In. per in. of soil	pH		
Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.0	Granular--	Low.
Fine sandy loam.	100	100	35-45	0.05-0.20	0.10	4.5-5.0	Subangular blocky.	Low.
Fine sandy loam.	100	100	35-45	0.05-0.20	0.10	4.5-5.0	Subangular blocky.	Low.
Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.0	Granular--	Low.
Sandy clay loam.	100	100	40-50	0.80-2.50	0.16	4.5-5.0	Subangular blocky.	Low or moderate.
Sandy loam to sandy clay loam.	100	100	35-50	0.05-0.20	0.15	4.5-5.0	Subangular blocky.	Low or moderate.
Fine sandy loam.	100	100	35-45	2.50-5.00	0.13	4.5-5.5	Granular--	Low.
Clay loam--	100	100	50-60	0.80-2.50	0.14	4.5-5.5	Subangular blocky.	Moderate.
Loam to sandy loam.	100	100	40-50	0.80-2.50	0.13	4.5-5.5	Subangular blocky.	Low.
Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.0	Granular--	Low.
Loam-------	100	100	55-65	0.20-0.80	0.13	4.5-5.0	Subangular blocky.	Low or moderate.
Loam-------	100	100	55-65	0.05-0.20	0.16	4.5-5.5	Subangular blocky.	Low or moderate..
Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.0	Granular--	Low.
Loam-------	100	100	55-65	0.80-2.50	0.14	4.5-5.0	Subangular blocky.	Moderate.
Clay loam--	100	100	50-60	0.05-0.20	0.12	4.5-5.0	Subangular blocky.	Moderate.

TABLE 6.--BRIEF DESCRIPTION OF THE SOILS AND

Map symbol	Soil name	Description of soil and site	Depth from surface	Engineering classification	
				Unified	AASHO
			In.		
RuA	Ruston fine sandy loam, 0 to 2 percent slopes.	Well-drained soils that are on uplands and have a fine sandy loam surface layer and a subsoil of sandy clay loam over sandy loam to loamy sand.	0-4	SM or SC--	A-4----
RuB	Ruston fine sandy loam, 2 to 5 percent slopes.		4-16	SC--------	A-6----
RuB2	Ruston fine sandy loam, 2 to 5 percent slopes, eroded.		16-50	SM--------	A-4----
RuC	Ruston fine sandy loam, 5 to 8 percent slopes.				
RuC2	Ruston fine sandy loam, 5 to 8 percent slopes, eroded.				
RuC3	Ruston fine sandy loam, 5 to 8 percent slopes, severely eroded.				
RuD	Ruston fine sandy loam, 8 to 12 percent slopes.				
RuD2	Ruston fine sandy loam, 8 to 12 percent slopes, eroded.				
RuD3	Ruston fine sandy loam, 8 to 12 percent slopes, severely eroded.				
RuE	Ruston fine sandy loam, 12 to 17 percent slopes.				
RuE2	Ruston fine sandy loam, 12 to 17 percent slopes, eroded.				
RuE3	Ruston fine sandy loam, 12 to 17 percent slopes, severely eroded.				
RuF	Ruston fine sandy loam, 17 to 35 percent slopes.				
RuF2	Ruston fine sandy loam, 17 to 35 percent slopes, eroded.				
Sa	Sandy alluvial land.	Excessively drained alluvium that washed from the Coastal Plain and is of variable texture.	-----	----------	-------
SfA	Savannah fine sandy loam, 0 to 2 percent slopes.	Moderately well drained soils that are on uplands and have a fine sandy loam surface layer and a subsoil of loam to sandy clay loam over a sandy loam fragipan; substratum consists of unconsolidated beds of sandy loam to clay loam.	0-7	SM or SC--	A-4----
SfB	Savannah fine sandy loam, 2 to 5 percent slopes.		7-22	CL--------	A-4 or A-6.
SfB2	Savannah fine sandy loam, 2 to 5 percent slopes, eroded.		22-49	SM or SC--	A-4----
SfC2	Savannah fine sandy loam, 5 to 8 percent slopes, eroded.				

ESTIMATED PHYSICAL PROPERTIES--Continued

USDA texture	Percentage passing sieve--			Permeability	Available water capacity	Reaction	Structure	Shrink-swell potential
	No. 4	No. 10	No. 200					
				In. per hr.	In. per in. of soil	pH		
Fine sandy loam.	100	100	34-45	2.50-5.00	0.13	4.5-5.0	Granular--	Low.
Silty clay loam.	100	100	40-50	2.50-5.00	0.14	4.5-5.0	Subangular blocky.	Moderate.
Sandy loam--	100	100	35-45	2.50-5.00	0.13	4.5-5.5	Subangular blocky.	Low.
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Fine sandy loam.	100	100	35-45	0.80-2.50	0.13	4.5-5.0	Granular--	Low.
Loam-------	100	100	55-65	0.80-2.50	0.14	4.5-5.0	Subangular blocky.	Low or moderate.
Sandy loam-	100	100	35-45	0.05-0.20	0.13	4.5-5.5	Subangular blocky.	Low.

TABLE 6.--BRIEF DESCRIPTION OF THE SOILS AND

Map symbol	Soil name	Description of soil and site	Depth from surface	Engineering classification	
				Unified	AASHO
			In.		
ShB	Shubuta fine sandy loam, 2 to 5 percent slopes.	Moderately well drained soils that have a fine sandy loam or a sandy clay loam surface layer and a sandy clay loam to clay subsoil; substratum consists of beds of sand and clay.	0-11	SM or SC---	A-4-----
ShB2	Shubuta fine sandy loam, 2 to 5 percent slopes, eroded.		11-46	CH---------	A-7-----
ShC	Shubuta fine sandy loam, 5 to 8 percent slopes.		46-60	SC---------	A-6-----
ShC2	Shubuta fine sandy loam, 5 to 8 percent slopes, eroded.				
ShD	Shubuta fine sandy loam, 8 to 12 percent slopes.				
ShD2	Shubuta fine sandy loam, 8 to 12 percent slopes, eroded.				
SnC3	Shubuta sandy clay loam, 5 to 8 percent slopes, severely eroded.				
SnD3	Shubuta sandy clay loam, 8 to 12 percent slopes, severely eroded.				
StA	Stough fine sandy loam, 0 to 2 percent slopes.	Somewhat poorly drained soil that is on terraces and has a fine sandy loam surface layer and a subsoil of sandy loam to light clay loam over a sandy loam fragipan.	0-11	SM or SC---	A-4-----
			11-18	SM or SC---	A-4-----
			18-60	SC---------	A-6-----
SuB2	Sumter clay, 2 to 5 percent slopes, eroded.	Moderately well drained soils that are on prairie uplands and have a surface layer and a subsoil of marly clay that is underlain by alkaline clay.	0-5	CH---------	A-7-----
SuB3	Sumter clay, 2 to 5 percent slopes, severely eroded.		5-36	CH---------	A-7-----
SuC2	Sumter clay, 5 to 8 percent slopes, eroded.				
SuD3	Sumter clay, 5 to 12 percent slopes, severely eroded.				
TfA	Tilden fine sandy loam, 0 to 2 percent slopes.	Moderately well drained soils that are on stream terraces and have a fine sandy loam surface layer and a subsoil of loam to clay loam underlain by a fine sandy loam to clay loam fragipan; substratum is fine sandy loam to clay loam.	0-8	SM or SC---	A-4-----
TfB	Tilden fine sandy loam, 2 to 5 percent slopes.		8-25	CL---------	A-6-----
TfB2	Tilden fine sandy loam, 2 to 5 percent slopes, eroded.		25-45	SM or SC---	A-4-----
TfC2	Tilden fine sandy loam, 5 to 8 percent slopes, eroded.				

ESTIMATED PHYSICAL PROPERTIES--Continued

USDA texture	Percentage passing sieve--			Permeability	Available water capacity	Reaction	Structure	Shrink-swell potential
	No. 4	No. 10	No. 200					
				In. per hr.	In. per in. of soil	pH		
Fine sandy loam.	100	100	35-45	0.80-2.50	0.16	4.5-5.0	Granular--	Low.
Clay-------	100	100	65-75	0.20-0.80	0.20	4.5-5.0	Subangular and angular blocky.	High.
Sandy clay loam.	100	100	40-50	0.05-0.20	0.15	4.5-5.5	Subangular and angular blocky.	Moderate.
Fine sandy loam.	100	100	35-45	0.80-2.50	0.15	4.5-5.5	Granular--	Low.
Sandy loam-	100	100	35-45	0.80-2.50	0.16	4.5-5.5	Subangular blocky.	Low.
Sandy clay loam.	100	100	40-50	0.05-0.20	0.14	4.5-5.5	Subangular blocky.	Moderate.
Clay-------	100	100	70-90	0.05-0.20	0.26	6.6-7.8	Subangular blocky.	High.
Clay-------	100	100	70-90	0.00-0.05	0.19	7.4-8.4	Angular blocky.	High.
Fine sandy loam.	100	100	35-45	0.80-2.50	0.16	4.5-5.0	Granular--	Low.
Loam------	100	100	55-65	0.80-2.50	0.14	4.5-5.5	Subangular blocky.	Moderate.
Fine sandy loam.	100	100	35-45	0.05-0.20	0.18	4.5-5.5	Subangular blocky.	Low.

TABLE 6.--BRIEF DESCRIPTION OF THE SOILS AND

Map symbol	Soil name	Description of soil and site	Depth from surface	Engineering classification	
				Unified	AASHO
			In.		
VaA	Vaiden clay, deep, 0 to 2 percent slopes.	Somewhat poorly drained soils that are on uplands and have a silt loam or clay surface soil and a clay subsoil.	0-3 3-38	CH--------- CH---------	A-7----- A-7-----
VaB	Vaiden clay, deep, 2 to 5 percent slopes.				
VaB2	Vaiden clay, deep, 2 to 5 percent slopes, eroded.				
VaC2	Vaiden clay, deep, 5 to 8 percent slopes, eroded.				
VaD2	Vaiden clay, deep, 8 to 12 percent slopes, eroded.				
VoA	Vaiden and Oktibbeha silt loams, deep, 0 to 2 percent slopes.				
VoB	Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes.				
VoC	Vaiden and Oktibbeha silt loams, deep, 5 to 8 percent slopes.				
VoD	Vaiden and Oktibbeha silt loams, deep, 8 to 12 percent slopes.				
Wa	Wahee fine sandy loam.	Somewhat poorly drained soil that is on terraces and has a fine sandy loam surface layer and a subsoil of clay loam to clay.	0-8 8-13 13-48	SM or SC--- CL--------- CL---------	A-4----- A-6----- A-6 or A-7.
Wp	West Point clay.	Moderately well drained soil that has a clay surface layer and subsoil; in recent alluvium that washed from the prairie.	0-38	CH---------	A-7-----

1/ Varies widely.

In most of this association the soils have a clay surface layer and subsoil. The shrink-swell potential is high because much of the clay is montmorillonitic. The soils shrink and crack during dry periods and swell when they are wet. They are sticky when wet, are slow in permeability, and have a low dispersion rate.

Unless these soils are handled specially, they do not make good roadbeds or building foundations. They are poorly suited as subgrade material because they contract and expand and cause the pavement to warp and crack. If the Eutaw soils are used as a subgrade for a roadway, they should be treated with lime or other material to improve their properties.

Bibb-Mantachie-Iuka association.—This association consists of poorly drained to moderately well drained, medium-textured to fine-textured, sandy soils on bottom lands in alluvium that was washed from the Coastal Plain. These soils are frequently flooded.

The available water capacity of these soils is moderate, and the shrink-swell capacity is generally low. The dispersion rate is high.

Because these soils are frequently flooded, they are difficult to remove and transport and are only fair for use as

ESTIMATED PHYSICAL PROPERTIES--Continued

USDA texture	Percentage passing sieve--			Permeability	Available water capacity	Reaction	Structure	Shrink-swell potential
	No. 4	No. 10	No. 200					
				In.per hr.	In. per in. of soil	pH		
Clay--------	100	100	70-90	0.05-0.20	0.25	4.5-5.5	Granular--	High.
Clay--------	100	100	70-90	0.00-0.05	0.25	5.0-6.0	Angular blocky.	Very high.
Fine sandy loam.	100	100	35-45	0.80-2.50	0.15	4.5-5.5	Granular--	Low.
Clay loam--	100	100	60-70	0.20-0.80	0.15	4.5-5.5	Subangular blocky.	Moderate.
Clay loam--	100	100	60-75	0.05-0.20	0.15	4.5-5.5	Subangular blocky.	Moderate or high.
Clay-------	100	100	70-90	0.00-0.05	0.28	6.6-8.4	Granular to massive.	High.

topsoil or road fill. Surface drainage is generally needed, but in some places locating the outlets suitable for good drainage is difficult.

Savannah-Ora-Pheba-Stough association.—This association consists of moderately well drained and somewhat poorly drained, moderately fine textured sandy loams on broad, nearly level or gently sloping uplands and stream terraces of the Coastal Plain. These soils have a fragipan.

The permeability of these soils is moderate above the fragipan and is slow in it. The shrink-swell potential is low to moderate, and the dispersion rate is moderate.

The soils in this association are good subgrade material because their shrink-swell potential is low to moderate. Also, the soils are stable and are good fill material. Little special handling of the Savannah and Ora soils is needed if they are used for building foundations or for roadbeds. These soils make up about 75 percent of the association. More special handling is required if the Pheba and Stough soils are used for building foundations because they are low, nearly level, and not so well drained as the Savannah and Ora soils. The Stough soils are fair for embankments, and they also may be used, without treatment, as subgrade on a road that has a small amount of traffic.

TABLE 7.--INTERPRETATION OF ENGINEERING

Soil and map symbol	Suitability as source of--				Soil features affecting--	
	Topsoil	Sand	Gravel	Road fill	Highway location	Dikes or levees
Angie (AnA, AnB, AnC2).	Surface layer good; other layers poor.	Poor----	Not suited--	Fair-----	Slow permeability; moderate shrink-swell potential.	Slow permeability.
Bibb and Bibb and Chastain (Bb, Bc).	Fair--------	Poor----	Not suited--	Fair-----	Frequent flooding.	Slow to moderate permeability.
Boswell and Boswell, Shubuta, and Cuthbert (BfB, BfB2, BfC, BfC2, BfD, BfD2, BoC3, BoD3, BtD, BtF).	Surface layer good; other layers poor.	Not suited.	Not suited--	Poor-----	Slow permeability; high shrink-swell potential.	Slow permeability.
Bruno (Bu).	Poor--------	Good----	Not suited--	Good-----	Low shrink-swell potential; rapid permeability.	Rapid permeability.
Cahaba (CaA, CaB, CaB2, CaD2).	Good--------	Substratum fair.	Not suited--	Good-----	Moderate permeability; low shrink-swell potential.	Moderate permeability; low shrink-swell potential; good stability.
Eustis (EsB, EsC, EsD, EsF, Et).	Poor--------	Good----	Not suited--	Good------	Rapid permeability; low shrink-swell potential.	Rapid permeability.

PROPERTIES OF SOILS

Soil features affecting--Continued						
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways	Suitability for septic tanks
Reservoir area	Embankment					
Slow seepage----	Fair strength and stability; good fill material.	Slow permeability; surface and subsurface drainage needed on flat slopes.	Moderate water-holding capacity; moderate intake rate; suitable for sprinklers.	No limiting properties on slopes of less than 8 percent.	Erodibility in sloping areas; moderate available water capacity; low fertility.	Poor; slow permeability.
Slow to moderate seepage; suitable for excavated and impounded ponds; seasonally high water table.	Fair strength and stability; good fill material.	Slow to moderate permeability; seasonally high water table; surface and subsurface drainage needed.	Low to moderate intake rate; moderate water-holding capacity.	Soil properties favorable for diversion terraces but other terraces are not needed.	Moderate water-holding capacity.	Not suited; high water table and flooding.
Very slow seepage.	High shrink-swell potential.	Slow permeability; drainage not needed.	Moderate water-holding capacity; moderate to slow intake rate.	No limiting properties on slopes of less than 8 percent.	High erodibility in sloping areas; moderate available water capacity; low fertility.	Poor; slow permeability because of plastic clay.
Rapid permeability; excessive seepage; not suitable for ponds.	Rapid permeability; excessive seepage.	Rapid permeability; drainage not needed.	Low water-holding capacity; rapid intake rate; frequent application of water needed.	Not needed; rapid permeability.	Droughtiness; vegetation difficult to establish.	Good; rapid permeability.
Slow to moderate seepage.	Good strength and stability; good fill material.	Moderate permeability; surface drainage needed in flat areas.	Moderate intake rate; moderate water-holding capcity; suitable for sprinklers.	No limiting properties on slopes of less than 8 percent.	Erodibility in sloping areas; moderate available water capacity; low fertility.	Good; moderate permeability.
Excessive seepage.	Rapid permeability.	Rapid permeability; drainage not needed.	Rapid intake rate; low water-holding capacity; frequent application of water needed.	Rapid permeability.	Droughtiness; vegetation difficult to establish.	Good except on slopes; rapid permeability.

TABLE 7.--INTERPRETATION OF ENGINEERING

Soil and map symbol	Suitability as source of--				Soil features affecting--	
	Topsoil	Sand	Gravel	Road fill	Highway location	Dikes or levees
Eutaw and Eutaw-Vaiden (Eu, Ev).	Poor---	Not suited.	Not suited--	Not suited.	High shrink-swell potential; seasonally high water table.	High shrink-swell potential; soils crack when dry.
Flint (FfA, FfB).	Surface layer good; other layers poor.	Not suited.	Not suited--	Fair or good.	Moderate permeability; moderate to low shrink-swell potential.	Moderate permeability; moderate to low shrink-swell potential; good stability.
Gullied land, acid (Ga).	Poor---	Not suited.	Not suited--	Variable--	Variable---	Variable---
Gullied land, alkaline (Gk).	Poor---	Not suited.	Not suited--	Not suited	High shrink-swell potential.	High shrink-swell potential.
Houlka (Ho).	Poor---	Not suited.	Not suited--	Poor---	High shrink-swell potential; seasonally high water table.	High shrink-swell potential.
Houston (HuA, HuB).	Poor---	Poor---	Not suited--	Not suited.	High shrink-swell potential; seasonally high water table.	High shrink-swell potential; soils crack when dry.

PROPERTIES OF SOILS--Continued

Soil features affecting--Continued						
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways	Suitability for septic tanks
Reservoir area	Embankment					
Very slow seepage; seasonally high water table.	High shrink-swell potential; soils crack when dry	Slow permeability; seasonally high water table; surface drainage difficult because of shallow depressions.	Slow intake rate; slow permeability.	Not needed----	High available water capacity; generally low fertility.	Not suited; slow permeability and seasonally high water table.
Moderate permeability; slow to moderate seepage.	Good strength and stability; good fill material.	Moderate permeability; surface drainage needed in flat areas.	Moderate water-holding capacity; moderate intake rate; suitable for sprinklers.	No limiting properties in areas needing terraces.	Erodibility in sloping areas; moderate available water capacity; low fertility.	Fair; moderate permeability.
Variable-------	Variable-----	Rapid permeability.	Rapid intake rate; low water-holding capacity.	Variable----	Variable-----	Variable.
Slow seepage; high water table.	High shrink-swell potential.	Slow permeability; highly erodible.	Slow intake rate.	Erodibility; high water-holding capacity.	High available water capacity; generally low fertility.	Poor; slow permeability and seasonally high water table.
Slow permeability; seasonally high water table.	High shrink-swell potential; cracks when dry.	Slow permeability; seasonally high water table; surface drainage needed; subsurface drainage difficult.	Slow intake rate; slow permeability.	Terraces not needed; properties favorable for diversions.	High available water capacity; generally low fertility.	Not suited; slow permeability and seasonally high water table.
Slow seepage; seasonally high water table.	High shrink-swell potential; soils crack when dry.	Slow permeability; surface drainage needed in flat areas.	Slow intake rate; slow permeability.	No limiting properties in areas needing terraces.	High available water capacity; moderate fertility.	Not suited: slow permeability and high water table.

TABLE 7.--INTERPRETATION OF ENGINEERING

Soil and map symbol	Suitability as source of--				Soil features affecting--	
	Topsoil	Sand	Gravel	Road fill	Highway location	Dikes or levees
Iuka (Ik, Iu).	Good	Poor	Not suited	Fair	Frequent flooding; low shrink-swell potential.	Moderate permeability; low shrink-swell potential.
Johnston (Jo).	Poor	Poor	Not suited	Poor	Frequent flooding.	High content of organic matter; moderate permeability.
Lauderdale; Lauderdale-Boswell; and Lauderdale-Eustis (LaC, LaF, LbD, LbF, LeD, LeF).	Poor	Poor	Not suited	Fair	Low shrink-swell potential; rock at or near surface.	Rock at or near surface; moderate permeability.
Leaf (Lf).	Fair	Poor	Not suited	Poor	High shrink-swell potential; slow permeability.	Slow permeability; high shrink-swell potential.
Mantachie and Mantachie, Bibb, and Iuka (Ma, Mc, Mn).	Fair	Poor	Not suited	Fair	Frequent flooding.	Moderate permeability.
Mashulaville loam (Ms).	Poor	Poor	Not suited	Fair	Slow permeability; seasonally high water table.	Slow permeability.
Mashulaville fine sandy loam, terrace (Mt).	Poor	Poor	Not suited	Fair	Slow permeability; seasonally high water table.	Slow permeability.

PROPERTIES OF SOILS--Continued

Soil features affecting--Continued						
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways	Suitability for septic tanks
Reservoir area	Embankment					
Slow to moderate seepage; suitable for excavated ponds.	Fair strength and stability; suitable fill material.	Moderate permeability; seasonally high water table.	Moderate water-holding capacity; moderate intake rate; suitable for sprinkler or flood irrigation	Terraces not needed; soil properties favorable for drainage.	Moderate water-holding capacity.	Not suited; seasonally high water table and flooding.
High water table; moderate seepage.	High organic-matter content; poor strength and stability.	High water table; moderate permeability.	Low intake rate; moderate permeability.	Terraces not needed; soil properties favorable for drainage.	Moderate water-holding capacity.	Not suited; high water table and flooding.
Moderate to high seepage; rock near the surface.	Moderate permeability; stony.	Moderate permeability; drainage not needed.	Low to moderate water-holding capacity; high intake rate.	Stony soil material; hazardous for terraces.	Rocks near the surface.	Not suited; bedrock near the surface.
Slow seepage; seasonally high water table.	High shrink-swell potential.	Slow permeability; seasonally high water table; surface and subsurface drainage needed.	Moderate water-holding capacity; slow intake rate.	Terraces not needed; soil properties favorable for diversions.	Moderate water-holding capacity; low fertility.	Not suited; high water table and flooding.
Slow to moderate seepage; seasonally high water table.	Fair strength and stability; good fill material.	Seasonally high water table; moderate permeability.	Moderate water-holding capacity; intake rate moderate.	Terraces not needed; soil properties favorable for diversions.	Moderate water-holding capacity.	Not suited; seasonally high water table and flooding.
Seasonally high water table; slow seepage.	Fair strength and stability.	Slow permeability; surface drainage needed.	Moderate water-holding capacity; slow intake rate.	Terraces not needed; soil properties favorable for diversions.	Moderate water-holding capacity.	Poor; seasonally high water table.
Seasonally high water table; slow seepage.	Fair strength and stability.	Slow permeability; surface and subsurface drainage needed.	Moderate water-holding capacity; slow intake rate.	Terraces not needed; soil properties favorable for diversions.	Moderate water-holding capacity.	Poor; seasonally high water table.

TABLE 7.--INTERPRETATION OF ENGINEERING

Soil and map symbol	Suitability as source of--				Soil features affecting--	
	Topsoil	Sand	Gravel	Road fill	Highway location	Dikes or levees
Ora (OfA, OfB, OfB2, OfC, OfC2, OfD2).	Good	Poor	Not suited	Fair	Slow to moderate permeability; low shrink-swell potential.	Slow to moderate permeability; good stability.
Orangeburg (OrC, OrC2, OrC3, OrD, OrD3, OrE, OrF).	Good	Substratum fair.	Not suited	Good	Moderate permeability; low shrink-swell potential.	Moderate permeability; low shrink-swell potential; good stability.
Pheba (PhA, PhB).	Fair	Poor	Not suited	Fair	Slow permeability; low shrink-swell potential.	Slow permeability.
Prentiss (PrA, PrB).	Good	Poor	Not suited	Fair	Slow to moderate permeability; low shrink-swell potential.	Slow to moderate permeability; good stability.
Ruston (RuA, RuB, RuB2, RuC, RuC2, RuC3, RuD, RuD2, RuD3, RuE, RuE2, RuE3, RuF, RuF2).	Good	Substratum fair.	Not suited	Good	Moderate permeability; low shrink-swell potential.	Good stability; moderate permeability; low shrink-swell potential.
Sandy alluvial land (Sa).	Poor	Good	Not suited	Fair	Variable	Rapid permeability.

PROPERTIES OF SOILS--Continued

Soil features affecting--Continued						
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways	Suitability for septic tanks
Reservoir area	Embankment					
Moderate to slow seepage.	High strength and stability; good fill material.	Moderate to slow permeability; surface drainage needed in flat areas because of fragipan.	Moderate water-holding capacity; moderate intake rate.	No limiting properties on slopes of less than 8 percent.	Erodibility in sloping areas; moderate available water capacity.	Fair; slow to moderate permeability.
Slow to moderate seepage.	Good strength and stability; good fill material.	Moderate permeability; surface drainage not needed.	Moderate intake rate; moderate water-holding capacity; suitable for sprinklers.	No limiting properties on slopes of less than 8 percent.	Erodibility in sloping areas; low fertility; moderate available water capacity.	Good; moderate permeability.
Slow permeability; seasonally high water table.	Fair strength and stability; suitable fill material.	Slow permeability; surface and subsurface drainage needed.	Moderate water-holding capacity; moderate intake rate.	No limiting properties in areas needing terraces.	Erodibility in sloping areas; moderate available water capacity; low fertility.	Poor; slow permeability and seasonally high water
Slow to moderate seepage; suitable for excavated and impounded ponds.	High strength and stability; good fill material.	Slow to moderate permeability; surface drainage needed in flat areas.	Moderate water-holding capacity; moderate intake rate.	No limiting properties on slopes of less than 8 percent.	Erodibility in sloping areas; moderate available water capacity; low fertility.	Fair; slow to moderate permeability.
Slow to moderate seepage.	High strength and stability; good fill material.	Moderate permeability; drainage not needed.	Moderate intake rate; high water-holding capacity; suitable for sprinklers.	No limiting properties on slopes of less than 8 percent.	Erodibility in sloping areas; moderate available water capacity; low fertility.	Good; moderate permeability.
Rapid permeability; low water holding capacity.	Rapid permeability; poor stability.	Rapid permeability; frequent flooding.	Rapid intake rate; low water-holding capacity.	Rapid permeability.	Droughtiness; vegetation difficult to establish.	Not suited; rapid permeability and frequent flooding.

TABLE 7.--INTERPRETATION OF ENGINEERING

Soil and map symbol	Suitability as source of--				Soil features affecting--	
	Topsoil	Sand	Gravel	Road fill	Highway location	Dikes or levees
Savannah (SfA, SfB, SfB2, SfC2).	Good---------	Not suited.	Not suited--	Good-----	Slow to moderate permeability; low shrink-swell potential.	Slow to moderate permeability; good stability.
Shubuta (ShB, ShB2, ShC, ShC2, ShD, ShD2, SnC3, SnD3).	Surface layer good; other layers poor.	Poor------	Not suited--	Poor; plastic subsoil.	Slow to moderate permeability; moderate to high shrink-swell potential.	Slow to moderate permeability.
Stough (StA).	Fair---------	Poor------	Not suited--	Fair-----	Slow permeability; low shrink-swell potential.	Slow permeability.
Sumter (SuB2, SuB3, SuC2, SuD3).	Poor---------	Poor------	Not suited--	Not suited.	High shrink-swell potential.	High shrink-swell potential; soils crack when dry; slow permeability.
Tilden (TfA, TfB, TfB2, TfC2).	Good---------	Poor------	Not suited--	Fair to good.	Slow to moderate permeability; low shrink-swell potential.	Good stability; slow to moderate permeability.
Vaiden and Vaiden and Oktibbeha (VaA, VaB, VaB2, VaC2, VaD2, VoA, VoB, VoC, VoD.	Poor---------	Poor------	Not suited--	Not suited.	High shrink-swell potential; seasonally high water table.	High shrink-swell potential; soils crack when dry.

PROPERTIES OF SOILS--Continued

Soil features affecting--Continued						
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways	Suitability for septic tanks
Reservoir	Embankment					
Moderate to slow seepage.	High strength and stability; good fill material.	Moderate to slow permeability; surface drainage needed in flat areas because of fragipan.	Moderate water-holding capacity; moderate intake rate.	No limiting properties on slopes of less than 8 percent.	Erodibility in sloping areas; moderate available water capacity; low fertility.	Fair; slow to moderate permeability.
Slow seepage.	Fair strength and stability; good fill material.	Slow to moderate permeability; drainage not needed.	Moderate water-holding capacity; moderate intake rate; suitable for sprinklers.	No limiting properties on slopes of less than 8 percent.	Erodibility in sloping areas; moderate available water capacity; low fertility.	Fair; slow to moderate permeability.
Slow permeability; suitable for excavated ponds; seasonally high water table.	Fair strength and stability; suitable fill material.	Slow permeability; surface and subsurface drainage needed.	Moderate water-holding capacity; moderate intake rate.	Terraces not needed; soil properties favorable for diversions.	Moderate available water capacity; low fertility.	Poor; slow permeability; and seasonally high water table.
Chalk near the surface; seasonally high water table.	High shrink-swell potential; soils crack when dry.	Slow permeability; seasonally high water table; surface drainage not needed.	Slow intake rate; slow permeability.	Soil material unfavorable because of chalk or marl.	Chalk near the surface; high available water capacity.	Not suited; slow permeability and high water table.
Slow to moderate permeability; suitable for excavated and impounded ponds.	Slow to moderate seepage; good fill material.	Surface drainage needed in some places because of fragipan; slow to moderate permeability.	Moderate water-holding capacity; moderate intake rate; suitable for sprinklers.	No limiting properties in areas needing terraces.	Erodibility in sloping areas; moderate water-holding capacity; low fertility.	Fair; slow to moderate permeability.
Slow seepage; seasonally high water table.	High shrink-swell potential; soils crack when dry.	Slow permeability; seasonally high water table; surface drainage needed in flat areas.	Slow intake rate; slow permeability.	No limiting properties on slopes of less than 8 percent.	Erodibility in sloping areas; vegetation difficult to establish in excavated areas.	Poor; slow permeability and seasonally high water table.

TABLE 7.--INTERPRETATION OF ENGINEERING

Soil and map symbol	Suitability as source of--				Soil features affecting--	
	Topsoil	Sand	Gravel	Road fill	Highway location	Dikes or levees
Wahee (Wa).	Poor----------	Poor------	Not suited--	Poor or fair.	Slow permeability; moderate to high shrink-swell potential.	Slow to moderate permeability; high shrink-swell potential.
West Point (Wp).	Poor----------	Poor------	Not suited--	Poor-----	High shrink-swell potential seasonally high water table.	High shrink-swell potential.

Ruston-Orangeburg association.—This soil association consists of well-drained, medium-textured to coarse-textured sandy loams on ridgetops and steep side slopes of the uplands.

The permeability of these soils is moderate to rapid, and the dispersion rate is high. The shrink-swell potential is low.

These soils are good sources of sand and fill material. If they are used as roadbeds or building foundations, little or no special handling is needed. The soils contract and expand very little and are stable in subgrades. If ponds are dug in the medium-textured Ruston and Orangeburg soils, the risk of seepage is moderate. Coarse-textured Eustis soils occur in this association and are poorly suited as sites for reservoirs. They could be used as a base for a roadway if they are treated with portland cement.

Ruston-Shubuta-Ora-Boswell association.—In this association are well drained and moderately well drained, medium-textured to fine-textured sandy loams on the narrow ridgetops and steep side slopes of the uplands. These soils formed in acid materials of the Coastal Plain.

The Ruston and Ora soils make up about 55 percent of this association. They have moderate to rapid permeability and a high dispersion rate. Their shrink-swell potential is low. Ruston and Ora soils are good sources of fill material. If they are used as roadbeds or building foundations, little or no special handling is needed.

The moderately fine textured and fine textured Shubuta and Boswell soils account for 40 percent of this association. They contain moderate amounts of montmorillonitic clay and have a high shrink-swell potential and a sticky subsoil. Permeability is generally slow, and the dispersion rate is moderate to low. If Shubuta and Boswell soils are used as roadbeds or building foundations, special handling is needed. These soils make poor material for subgrades because they contract and expand. Generally good sites for reservoirs are available.

Lauderdale-Boswell association.—This association consists of moderately well drained to excessively drained, medium-textured and coarse-textured soils on the narrow ridgetops and steep side slopes of the uplands. These soils formed in material of the Coastal Plain. The soils on steep slopes are susceptible to erosion.

The Lauderdale soils make up about 50 percent of this association. They have a medium-textured to moderately coarse textured subsoil that contains much partly weathered sandstone and is underlain by horizontal layers of platy sandstone. Pieces of sandstone of various sizes are on or near the surface. The upper layers of Lauderdale soils are moderately permeable. Roadbeds on level to gently sloping grades are good, but slides are frequent in deep cuts.

The Boswell soils account for about 40 percent of this association. These soils contain a moderate amount of montmorillonitic clay and have a high shrink-swell potential and a clayey subsoil that is sticky when wet. Their permeability rate is generally slow, and the dispersion rate is moderate to low. Special handling is needed if Boswell soils are used as roadbeds or building foundations. These

PROPERTIES OF SOILS--Continued

Soil features affecting-Continued						
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways	Suitability for septic tanks
Reservoir area	Embankment					
Slow seepage--	Moderate to high shrink-swell potential; fair strength and stability.	Slow permeability; seasonally high water table; surface and subsurface drainage needed.	Moderate water-holding capacity; slow intake rate.	Terraces not needed; soil properties favorable for diversions.	Moderate available water capacity; low fertility.	Poor; slow permeability.
Slow permeability; seasonally high water table.	High shrink-swell potential; cracks; when dry.	Slow permeability; seasonally high water table; surface drainage needed; subsurface drainage difficult.	Low water-holding capacity; slow intake rate.	Terraces not needed; soil properties favorable for diversions.	High available water capacity.	Not suited; slow permeability and seasonally high water table.

soils make poor material for subgrade because they contract and expand.

Ditches and waterways in Lauderdale and Boswell soils are likely to erode unless sod, pavement, or check dams are used.

Formation and Classification of Soils

This section discusses the factors of soil formation and tells how they have affected the formation of soils in Clarke County. It also classifies soil series by soil orders and great soil groups, and it describes each soil series in the county and a profile of a soil representative of the series.

Factors of Soil Formation

Soil is a function of climate, living organisms, parent material, topography, and time. The nature of the soil at any point on the earth depends on the combination of the five major factors at that point. All five factors come into play in the formation of every soil. The relative importance of each differs from place to place; sometimes one is more important and sometimes another. In extreme instances one factor may dominate the formation of the soil and fix most of its properties, as is common when the parent material consists of pure quartz sand. Little can happen to quartz sand, and the soils derived from it usually have faint horizons. Even in quartz sand, however, distinct profiles can be formed under certain types of vegetation where the topography is low and flat and a high water table is present. Thus, for every soil the past combination of the five major factors is of the first importance to its present character.

The soils that formed in Clarke County vary widely in degree of horizonation. Texture varies markedly between the A and B horizons in many profiles and between the B and C horizons in a few.

Climate

Climate is important in soil formation. Temperature and rainfall affect the rates at which rocks weather and minerals decompose. They also influence leaching, eluviation, and illuviation. The kinds of plants and animals that live in a region at least partly depend on climate. These organisms, in turn, affect the formation of soils.

In Clarke County summers are long, winters are short and mild, and rainfall is relatively heavy. These features of climate favor rapid chemical reactions. Because rainfall is high, the soils are fairly rapidly leached of soluble materials during much of winter and early in spring. Little organic matter accumulates in the soils. The moderate to warm temperature and the heavy rainfall encourage rapid decomposition of organic matter. Occasionally there are brief periods when the soils are frozen to a depth of a few inches, but freezing and thawing have little effect on the weathering of rocks and the formation of soils. Climate is fairly uniform throughout the county and is not a major factor in producing differences in soils.

Plants and animals

Active in the soil-forming processes are trees, shrubs, grasses, burrowing animals, earthworms, micro-organisms, and other plants and animals that live on and in the soil. These organisms bring about changes that, among other things, depend on the kind of life and the life processes peculiar to each. The kinds of plants and animals that live on and in the soil are determined by environmental factors, including climate, parent material, relief, age of the soil, and the associated organisms. From the standpoint of profile development, the chief functions of plants and animals are to furnish organic matter to the soil and to move plant nutrients from the lower horizons to the upper horizons.

When the early settlers arrived, a dense forest covered the sandy uplands, the acid parts of the prairie section, the stream terraces, and the flood plains. The alkaline parts of the prairie section were covered mainly with grasses. As farming in the county expanded, more land was cleared, cultivated, and drained. This activity of man has affected the development of the soils. At present much of the land has reverted to trees and grasses.

Most soils of the county contain a small amount of organic matter, which is mostly in the upper part of the A horizon. In some forested areas, a thin covering of leaf mold or forest debris is on the surface and the top 2 or 3 inches of the A horizon contains enough organic matter to impart a dark-gray or brownish-gray color. In the county as a whole, the accumulated organic matter has been of little importance in the forming of horizons. Organic matter derived from the various plants decomposes rather rapidly because of the favorable temperature and moisture, the favorable character of the organic material itself, and the favorable micropopulation of the soil.

Parent materials

The soils of Clarke County formed from parent materials that were derived from the many geologic formations that crop out in the county. These formations are of Eocene and Oligocene ages. The formations of Eocene age are the Wilcox formation, Sparta sand, Zilpha clay, Winona sand and Neshoba sand, the Tallahatta formation, the Cook Mountain formation, the Cockfield formation, and the Jackson formation. The formations of Oligocene age are Chickasawhay limestone, Vicksburg group, Forest Hill sand, and Red Bluff clay (*10*).

The Wilcox formation consists of fine to coarse sand, more or less lignitic clay, and lignite that are irregularly bedded. The bauxite-bearing Fearn Springs sand is at the base of this formation. Irregularly bedded sand, clay, and some quartzite make up the Sparta sand. The Zilpha clay is chocolate-colored clay that contains some glauconitic sand. The Winona sand is highly glauconitic but is more or less clayey, and Neshoba sand is slightly glauconitic and fairly coarse. The materials of the Tallahatta formation are quartzite, claystone, sandstone, and sand, but the claystone dominates. The Cook Mountain formation is made up of marl, limestone, glauconitic sand, and chocolate-colored clay. Irregular beds of lignitic clay, sand, and lignite that are more or less laminated make up the Cockfield formation. Materials of the Jackson formation are soft limestone, quartz, and glauconite (*5*).

Chickasawhay limestone, of Oligocene age, consists of sandy limestone and sand. The Vicksburg group is dominantly limestone and marl, but it contains some bentonite and, near the top, chocolate-colored clay and some sand. The Forest Hill sand is made up of cross-bedded fine gray sand, laminated fine sand and clay, and a little lignite. Its lower part merges eastward into Red Bluff clay, which consists of blue-green glauconitic, gypsiferous, and fossiliferous clay, and thin beds of limestone.

Topography

The topography of Clarke County is largely determined by the underlying bedrock formations and how they have been affected by geologic forces, including the dissection of rivers and streams. Topography influences soil formation through its effect on drainage, erosion, temperature, and plant cover. Its influence is modified by the other factors of soil formation.

The topography of Clarke County ranges from highly dissected areas with narrow ridgetops and steep side slopes to broad, nearly level areas. The steep hillsides slope to the broad, nearly level areas. The most dissected part of the county is the eastern part, where steep hillsides and narrow ridgetops are numerous and many intermittent streams occur in the narrow valleys. In the north-central and western parts of the county are broad, nearly level and gently sloping areas that have sloping to strongly sloping side slopes. The prairie in the southern part of the county is nearly level to sloping. Most of the alluvial soils are level to nearly level.

The elevation at Quitman is about 230 feet above sea level. Other elevations are Pachuta, 265 feet; Enterprise, 250 feet; and Shubuta, 195 feet.

Time

The length of time required for soil development largely depends on the other factors of soil formation. Less time is generally required for a soil to develop in humid, warm regions with luxuriant vegetation than is required in dry or cold regions with scanty vegetation. Also, less time is generally required if the parent material is coarse textured than if it is fine textured.

The age of soil varies considerably. Mature soils have well-developed profiles with clearly defined horizons or layers. Soils on the less sloping relief usually have more mature development than those on the steeper slopes. On the first bottoms, the soil materials have been in place too short a time to allow for mature development.

Classification of Soils by Higher Categories

Soils are placed into narrow classes for the organization and application of knowledge about their behavior within farms or counties. They are placed into broad classes, for study and comparisons of large areas such as continents. In the comprehensive system of soil classification followed in the United States the soils are placed into six categories, one above the other. Beginning at the top, the six categories are the order, suborder, great soil group, family, series, and type (*3*, *9*).

The highest category has the soils of the whole country grouped into three orders, whereas thousands of soil types are recognized in the lowest category. The suborder and family categories have never been fully developed and thus have been little used. Attention has largely been given to the classification of soil types and series within counties or comparable areas and to the subsequent grouping of the series into great soil groups and orders (*17*).

Classes in the highest category of the classification scheme are the zonal, intrazonal, and azonal orders. The zonal order comprises soils with evident, genetically related horizons that reflect the predominant influence of climate and living organisms in their formation. In Clarke County, only the Red-Yellow Podzolic great soil group is in this order.

The intrazonal order consists of soils with evident, genetically related horizons that reflect the dominant influence of a local factor of topography or parent materials over the effects of climate and living organisms. In Clarke County, the great soil groups in this order are the Grumusols, Low-Humic Gley soils, Humic Gley soils, Planosols, and Rendzinas.

The azonal order consists of soils that lack distinct genetically related horizons commonly because of youth, resistant parent material, or steep topography. In Clarke County the great soil groups in this order are Regosols, Alluvial soils, and Lithosols.

In table 8 the soil series in Clarke County are classified according to soil orders and great soil groups, and some distinguishing characteristics of each series are given. Described in the following pages are each great soil group and soil series in the county and a soil profile representative of each series.

Red-Yellow Podzolic soils

The soils of the Red-Yellow Podzolic great soil group are of the zonal order. These soils formed under deciduous forests in humid regions that are warm-temperate to tropical. They are well-developed, well-drained, acid soils that have a thin organic A0 and an organic-mineral A1 horizon. The A1 horizon is underlain by a light-colored, bleached A2 horizon that overlies a red, yellowish-red, or yellow, more clayey B2 horizon.

In Clarke County, all Red-Yellow Podzolic soils have a dark-colored, thin A1 horizon that contains only a small amount of organic matter. The A2 horizon is well defined and has weak, granular or crumb structure. Its organic-matter content is low. In cultivated areas, the Ap horizon, or plow layer, is a mixture of the A1 and A2 horizons. The B2 horizon has moderate to strong, medium, subangular blocky to angular blocky structure. The C horizon has weaker structure than the B2 horizon and contains less clay.

Some Red-Yellow Podzolic soils in Clarke County are representative of the great soil group, some grade toward Low Humic Gley soils, some grade toward Grumusols, and some have a fragipan.

Representative Red Yellow Podzolic Soils.—Representative Red-Yellow Podzolic soils in this county are in the Angie, Boswell, Cahaba, Cuthbert, Flint, Oktibbeha, Ruston, and Shubuta series.

Angie series: Soils of the Angie series are on the uplands of the Coastal Plain on slopes of 0 to 8 percent. They are acid and somewhat poorly drained. Angie soils occur with Shubuta, Ora, Savannah, and Boswell soils throughout the county. Most of the acreage is in woods, but small areas are used for crops and pasture.

Profile of Angie fine sandy loam, 5 to 8 percent slopes, eroded (100 yards north and 1 mile east of the intersection of U.S. Highway No. 11 and paved road at Jasper County line; in a pasture):

Ap—0 to 2 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; many grass roots; strongly acid; abrupt, smooth boundary.

A2—2 to 6 inches, brown (10YR 5/3) fine sandy loam; weak, fine, granular structure; very friable; many grass roots; strongly acid; abrupt, smooth boundary.

B2t 6 to 19 inches, mottled brownish-yellow (10YR 6/6), yellowish-brown (10YR 5/8), and light brownish-gray (10YR 6/2) clay loam or heavy sandy clay loam; weak, medium, subangular blocky structure; firm when moist, hard when dry; few fine grass roots; many voids filled with sandy loam from horizon A; strongly acid; gradual, wavy boundary.

C1—19 to 26 inches, mottled brownish-yellow (10YR 6/6), gray (10YR 6/1), and red (2.5YR 4/8) sandy clay; massive; firm when moist, hard when dry; few fine grass roots; many voids filled with sandy loam material from horizon B; strongly acid; gradual, wavy boundary.

C2—26 to 54 inches, mottled gray (10YR 6/1), yellowish-brown (10YR 5/8), and red (2.5YR 4/6) sandy clay; massive; firm; strongly acid.

Boswell series: Soils of the Boswell series are on the uplands of the Coastal Plain on slopes of 2 to 45 percent. They are acid and moderately well drained. Boswell soils occur with Shubuta, Cuthbert, Ruston, and Ora soils throughout the county. Most of the acreage is in forest, but areas on the more gentle slopes are used for crops and pasture.

Profile of Boswell fine sandy loam, 2 to 5 percent slopes, eroded (¼ mile east of intersection of paved roads that is 4½ miles east of De Soto; in woods on south side of road):

Ap—0 to 4 inches, brown (10YR 4/3) fine sandy loam; weak, fine, granular structure; very friable; few, fine, brown concretions; few fine roots; strongly acid; abrupt, smooth boundary.

B21t 4 to 16 inches, dark-red (2.5YR 3/6) clay; strong, fine and medium, angular blocky and subangular blocky structure; friable when moist, plastic when wet; clay films on ped faces; few, fine, brown concretions; strongly acid; clear, smooth boundary.

B22t—16 to 25 inches, red (2.5YR 4/6) clay; many, medium, distinct, yellowish-brown (10YR 5/6) mottles; strong, fine and medium, angular block and subangular blocky structure; firm when moist, very plastic when wet; clay films on ped faces; strongly acid; gradual, smooth boundary.

B3t 25 to 38 inches, mottled red (2.5YR 4/6), yellowish-brown (10YR 5/6), dark-red (2.5YR 3/6), and light olive-gray (5Y 6/2) clay; strong, fine and medium, angular and subangular blocky structure; firm when moist, very plastic when wet; strongly acid.

Cahaba series: Soils of the Cahaba series are on stream terraces of the Coastal Plain on slopes of 0 to 12 percent. These well-drained soils formed in old alluvium that is medium textured to coarse textured. Cahaba soils occur with Tilden, Prentiss, and Stough soils throughout the county. Most of the acreage has been cleared and is used for crops and pasture.

TABLE 8.--CHARACTERISTICS AND GENETIC RELATIONSHIPS OF SOIL SERIES

ZONAL

Great soil group and soil series	Brief profile description 1/	Position	Drainage class	Slope range	Parent material	Degree of profile development 2/
				Percent		
Red-Yellow Podzolic soils:						
Representative--						
Angie---------	Dark grayish-brown to brown fine sandy loam surface layer underlain by mottled brownish-yellow to gray clay loam to heavy sandy clay over mottled gray, yellowish-brown, and red sandy clay.	Upland----	Somewhat poorly drained.	0 to 8	Clay of the Coastal Plain.	Strong.
Boswell-------	Brown fine sandy loam surface layer underlain by a dark-red clay subsoil over a gray clay substratum.	Upland----	Moderately well drained.	2 to 45	Clay of the Coastal Plain.	Strong.
Cahaba--------	Brown to dark-brown fine sandy loam surface layer underlain by a yellowish-red to red sandy clay loam subsoil over a fine sandy loam to loamy sand substratum.	Terrace---	Well drained----	0 to 12	Sandy and clayey alluvium from the Coastal Plain.	Moderate.
Cuthbert------	Very dark gray to brown fine sandy loam surface layer underlain by yellowish-red clay to clay loam over strata of mottled sandy loam.	Upland----	Moderately well drained.	5 to 45	Clay and sand of the Coastal Plain.	Strong.
Flint---------	Very dark grayish-brown to pale-brown fine sandy loam surface layer underlain by a yellowish-red clay loam subsoil over yellowish-red sandy clay loam that is mottled with gray and yellow at about 36 inches.	Terrace---	Moderately well drained.	0 to 5	Clayey and sandy alluvium from the Coastal Plain.	Strong.
Oktibbeha-----	Brown silt loam surface layer underlain by a red clay subsoil over mottled red and gray clay.	Upland----	Moderately well drained.	0 to 12	Clay of the Coastal Plain underlain by calcareous material.	Moderate.

Ruston---------	Grayish-brown fine sandy loam surface layer underlain by a subsoil that is yellowish-red to red sandy clay loam in the upper part and yellowish-red to red fine sandy loam in the lower.	Upland----	Well drained---	0 to 35	Sand and clay of the Coastal Plain.	Moderate.
Shubuta--------	Dark-gray to yellowish-brown fine sandy loam surface layer underlain by a subsoil that is red sandy clay loam in the upper part and mottled red to brownish-yellow sandy clay loam in the lower.	Upland----	Moderately well drained.	2 to 45	Sand and clay of the Coastal Plain.	Strong.
Grading toward Reddish-Brown Lateritic soils--						
Orangeburg-----	Brown fine sandy loam surface layer underlain by a subsoil that is dark-red, friable loam to clay loam in the upper part and red, friable sandy loam in the lower.	Upland----	Well drained---	5 to 35	Sand and clay of the Coastal Plain.	Moderate.
Grading toward Low-Humic Gley soils--						
Wahee----------	Dark grayish-brown fine sandy loam surface layer underlain by a subsoil that is yellowish-brown clay loam in the upper part and mottled gray to brownish-gray clay in the lower.	Terrace---	Somewhat poorly drained.	0 to 2	Clayey alluvium from the Coastal Plain.	Moderate.
Grading toward Grumusols--						
Vaiden---------	Dark grayish-brown clay surface layer underlain by a firm, plastic clay subsoil that is yellowish brown in the upper part and mottled light gray and yellowish brown in the lower.	Upland---	Somewhat poorly drained.	0 to 12	Clay of the Coastal Plain underlain by calcareous material.	Moderate.
With fragipans--						
Ora----------	Brown fine sandy loam surface layer underlain by a yellowish-red sandy clay loam subsoil over a mottled sandy clay loam pan.	Upland---	Moderately well drained.	0 to 12	Sand and clay of the Coastal Plain.	Strong.

See footnotes at end of table.

TABLE 8.--CHARACTERISTICS AND GENETIC RELATIONSHIPS OF SOIL SERIES--Continued

ZONAL--Continued

Great soil group and soil series	Brief profile description 1/	Position	Drainage class	Slope range	Parent material	Degree of profile development 2/
				Percent		
Red-Yellow Podzolic soils--Continued						
With fragipans--Continued--						
Prentiss-------	Dark grayish-brown to very pale brown fine sandy loam surface layer underlain by yellowish-brown loam subsoil over a pan of mottled yellowish-brown to brownish-gray clay loam.	Terrace---	Moderately well drained.	0 to 5	Clayey and sandy alluvium from the Coastal Plain.	Strong.
Savannah-------	Brown fine sandy loam surface layer underlain by yellowish-brown loam subsoil over a hard, compact pan of loam to fine sandy loam.	Upland----	Moderately well drained.	0 to 8	Sand and clay of the Coastal Plain.	Strong.
Tilden---------	Dark grayish-brown fine sandy loam surface layer underlain by yellowish-red loam subsoil over a hard, compact pan of fine sandy loam or loam.	Terrace---	Moderately well drained.	0 to 8	Sandy and clayey alluvium from the Coastal Plain.	Strong.

INTRAZONAL

Grumusols:						
Houston--------	Black clay surface layer underlain by a very dark-gray to olive-gray, mottled, alkaline subsoil; firm when moist, and very plastic when wet.	Upland----	Moderately well drained.	0 to 5	Clay of the prairie.	Weak.
West Point-----	Black clay surface layer underlain by a very dark gray, firm clay.	Bottom land.	Moderately well drained.	0 to 2	Clayey alluvium from the Coastal Plain.	Weak.
Low-Humic Gley soils:						
Representative--						
Bibb-----------	Dark-gray fine sandy loam surface layer underlain by mottled brownish-gray to yellowish-brown sandy loam to sandy clay loam.	Bottom land.	Poorly drained-	0 to 2	Sandy alluvium from the Coastal Plain.	Weak.

Chastain	Dark-gray fine sandy loam underlain by light brownish-gray to gray sandy clay to clay loam mottled with yellowish brown.	Bottom land.	Poorly drained	0 to 2	Clayey alluvium from the Coastal Plain.	Weak.
Grading toward Grumusols:						
Eutaw	Dark grayish-brown clay surface layer underlain by gray to olive-gray, firm, very plastic clay mottled with yellow.	Upland	Somewhat poorly drained.	0 to 2	Clay of the prairie over calcareous material.	Weak.
Humic Gley soil:						
Johnston	Very dark gray to black loam surface layer underlain by black fine sandy loam subsoil; soil high in organic-matter content.	Bottom land.	Poorly drained	0 to 2	Sandy alluvium from the Coastal Plain.	Weak.
Planosols:						
With fragipans:						
Mashulaville	Dark-gray loam surface layer underlain by a light-gray to pale-brown fine sandy loam subsoil over a fragipan of light-gray and yellowish-brown fine sandy loam.	Upland	Poorly drained	0 to 2	Sand and clay of the Coastal Plain.	Moderate.
Pheba	Dark grayish-brown fine sandy loam surface layer over a grayish-brown fine sandy loam underlain by a light yellowish-brown to light brownish-gray loam subsoil over a sandy loam to loam pan.	Upland	Somewhat poorly drained.	0 to 5	Sand and clay of the Coastal Plain.	Strong.
Stough	Very dark gray to pale-olive fine sandy loam surface layer underlain by light yellowish-brown sandy loam subsoil over a pan of mottled gray and yellowish-brown sandy loam to sandy clay loam.	Terrace	Somewhat poorly drained.	0 to 2	Sandy and clayey alluvium of the Coastal Plain.	Strong.
With claypan:						
Leaf	Grayish-brown fine sandy loam surface layer over a subsoil of mottled gray and brownish-gray, firm clay.	Terrace	Poorly drained	0 to 2	Sandy and clayey alluvium of the Coastal Plain.	Moderate.

See footnotes at end of table.

749-450—65——7

TABLE 8.--CHARACTERISTICS AND GENETIC RELATIONSHIPS OF SOIL SERIES--Continued

INTRAZONAL--Continued

Great soil group and soil series	Brief profile description 1/	Position	Drainage class	Slope range	Parent material	Degree of profile development 2/
				Percent		
Rendzinas:						
Sumter--------	Very dark grayish-brown clay surface layer underlain by pale-olive to olive-yellow, firm clay subsoil over calcareous chalk.	Upland----	Moderately well drained.	2 to 12	Selma chalk--------	Moderate.
AZONAL						
Regosols:						
Eustis--------	Dark-brown loamy sand surface layer underlain by brown to yellowish-red loamy sand to sand subsoil.	Upland and terraces.	Excessively drained.	0 to 35	Sand and loamy sand of the Coastal Plain.	Weak.
Alluvial soils:						
Representative--						
Bruno---------	Very dark grayish-brown loamy fine sand surface layer underlain by brown to light yellowish-brown loamy fine sand subsoil.	Bottom land.	Somewhat excessively drained.	0 to 2	Sandy alluvium from the Coastal Plain.	Weak.
Houlka--------	Very dark-gray clay surface layer underlain by a dark-brown to brownish-gray clay subsoil.	Bottom land.	Somewhat poorly drained.	0 to 2	Clayey alluvium from the Coastal Plain.	Weak.
Iuka----------	Dark grayish-brown fine sandy loam surface layer underlain by a subsoil that is brown sandy loam to loam in the upper part and mottled brown and brownish-gray fine sandy loam in the lower.	Bottom land.	Moderately well drained.	0 to 2	Sandy alluvium from the Coastal Plain.	Weak.
Grading toward Low-Humic Gley soils--						
Mantachie-----	Brown fine sandy loam surface layer underlain by a subsoil of mottled brown, yellowish-brown, and gray sandy loam to sandy clay loam.	Bottom land.	Somewhat poorly drained.	0 to 2	Sandy alluvium from the Coastal Plain.	Weak.

Lithosols: Lauderdale-----	Very dark gray stony fine sandy loam surface layer underlain by strata of partly weathered sandstone.	Upland ---	Well drained to excessively drained.	5 to 45	Sandy material of the Tallahatta (Buhrstone) formation.	Weak.

1/ Descriptions are of soil profiles not materially affected by accelerated erosion.

2/ Estimated by considering the number of important genetic horizons and the degree of contrast between them.

Profile of Cahaba fine sandy loam, 0 to 2 percent slopes (1¼ miles west of Quitman and ⅛ mile east of the Chickasawhay River; in a field):

Ap—0 to 7 inches, brown to dark-brown (10YR 4/3) fine sandy loam; weak, very fine, granular structure; very friable; strongly acid; abrupt, smooth boundary.

A2—7 to 10 inches, dark-brown (7.5YR 4/4 and 10YR 4/3) fine sandy loam; weak, fine, subangular blocky structure; friable; strongly acid; abrupt, smooth boundary.

B21t—10 to 24 inches, red (2.5YR 4/6) sandy clay loam; moderate, medium, subangular blocky structure; friable; strongly acid; clear, smooth boundary.

B22t—24 to 34 inches, yellowish-red (5YR 5/6) sandy clay loam; moderate, medium, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

B3t—34 to 40 inches, yellowish-red (5YR 5/8) fine sandy loam; weak, medium, subangular blocky structure; friable; strongly acid; clear, smooth boundary.

IIC—40 to 50 inches, strong-brown (7.5YR 5/6) loamy sand; weak, fine, granular structure; very friable; strongly acid.

Cuthbert series: Soils of the Cuthbert series are on the uplands of the Coastal Plain on slopes of 5 to 45 percent. They are acid and moderately well drained. Cuthbert soils are mapped with Boswell and Shubuta soils throughout the county. Most of the acreage is in forest.

Profile of Cuthbert fine sandy loam, 12 to 45 percent slopes (1 mile southeast of Cooper's store in northeastern corner of county; in woods on east side of a local road):

A1—0 to 3 inches, very dark gray (10YR 3/1) fine sandy loam; weak, fine and medium, granular structure; very friable; many fine roots; few to common iron crusts 3 to 8 inches in diameter, on the surface; strongly acid; abrupt, smooth boundary.

A2—3 to 8 inches, brown (10YR 5/3) fine sandy loam; weak, fine and medium, granular structure; very friable; many roots; strongly acid; clear, smooth boundary.

B2t—8 to 17 inches, yellowish-red (5YR 4/8) clay; moderate, medium, angular blocky structure; friable; strongly acid; gradual, smooth boundary.

B3t—17 to 24 inches, mottled yellowish-red (5YR 4/8), reddish-yellow (7.5YR 6/6), and light-gray (10YR 7/1) clay loam; moderate, medium, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

IIC—24 to 36 inches, mottled red, gray, and yellow sandy loam in stratified layers; friable; thin discontinuous layers of iron crust; strongly acid.

Flint series: Soils of the Flint series are on stream terraces of the Coastal Plain on slopes of 0 to 5 percent. They formed in old alluvium that is medium to fine textured and are acid and moderately well drained. Flint soils occur with Prentiss, Tilden, and Wahee soils throughout the county. Most of the acreage has been cleared and is used for crops and pasture.

Profile of Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes (2½ miles north of Shubuta and 50 feet west of dirt road; in woods on east side of the Chickasawhay River):

A1—0 to 2 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; weak, very fine, granular structure; very friable; many fine roots; strongly acid; abrupt, smooth boundary.

A2—2 to 10 inches, pale-brown (10YR 6/3) fine sandy loam; weak, fine, granular structure; friable; few fine roots; small amount of mixing with A1 horizon by root and worm action; strongly acid; clear, smooth boundary.

B1—10 to 14 inches, strong-brown (7.5YR 5/6) loam to clay loam; weak, fine, subangular blocky structure; friable; much material from A1 and A2 horizons; few fine roots; strongly acid; clear, smooth boundary.

B21t—14 to 23 inches, yellowish-red (5YR 5/6) clay loam; strong, medium, angular blocky and subangular blocky structure; friable; few clay films on ped faces; few large roots; few brown concretions; strongly acid; gradual, smooth boundary.

B22t—23 to 36 inches, yellowish-red (5YR 5/8) heavy clay loam to clay; many, fine, distinct, light yellowish-brown (10YR 6/4) and red (2.5YR 4/6) mottles; strong, medium, angular blocky and subangular blocky structure; friable; many patchy clay films or ped faces; strongly acid; gradual, smooth boundary.

B3—36 to 45 inches, yellowish-red (5YR 5/8) sandy clay loam; many, medium, distinct, light yellowish-brown (10YR 6/4) and yellow (10YR 7/6) mottles; weak, medium, subangular blocky structure; friable; strongly acid.

Oktibbeha series: Soils of the Oktibbeha series are on prairie uplands on slopes of 0 to 12 percent. They are underlain by very plastic clay and are acid and moderately well drained. Oktibbeha soils occur with Vaiden and Eutaw soils throughout the prairie section of the county. Most of the acreage is in forest.

Profile of Oktibbeha silt loam, deep, 2 to 5 percent slopes (4½ miles west-northwest of Tribulation Church and 100 yards south of dirt road; in woods):

Ap—0 to 8 inches, brown (10YR 5/3) silt loam; weak, fine, crumb structure; friable; many fine roots; very strongly acid; abrupt, smooth boundary.

B21t—8 to 16 inches, red (2.5YR 4/6) clay; strong, medium, angular blocky structure; firm when moist, very plastic when wet; strongly acid; clear, smooth boundary.

B22t—16 to 28 inches, mottled red (2.5YR 4/6), light-gray (10YR 7/1), and yellowish-brown (10YR 5/6) clay; strong, medium, angular blocky structure; firm when moist, very plastic when wet; strongly acid; gradual, smooth boundary.

C1—28 to 43 inches, mottled red (10R 4/6) and gray (10YR 6/1) clay; massive; firm when moist, very plastic when wet; strongly acid; clear, smooth boundary.

C2—43 to 55 inches, mottled gray (10YR 6/1), strong-brown (7.5YR 5/8), and yellowish-red (5YR 4/8) clay; massive; firm when moist, very plastic when wet; strongly acid.

Ruston series: Soils of the Ruston series are on uplands of the Coastal Plain on slopes of 0 to 35 percent. They are acid and well drained. Ruston soils occur with Orangeburg, Eustis, Ora, and Savannah soils throughout the county. Most of the acreage is in forest, but areas on the more gentle slopes are used for crops and pasture.

Profile of Ruston fine sandy loam, 5 to 8 percent slopes (4 miles north of Quitman and 100 yards east of U.S. Highway No. 45; in a cultivated field on north side of local road):

Ap—0 to 4 inches, grayish-brown (10YR 5/2) fine sandy loam; weak, fine, granular structure; very friable; few fine roots; some mixing through action of roots and worms; strongly acid; clear, smooth boundary.

B21t—4 to 16 inches, red (2.5YR 4/8) sandy clay loam; weak, fine and medium, subangular blocky structure; friable; few sand pockets, ½ to 1 inch in diameter; few, fine, soft, black concretions; very strongly acid; clear, smooth boundary.

B22t—16 to 27 inches, yellowish-red (5YR 5/8) to red (2.5YR 4/6) fine sandy loam; single grain; very friable; very strongly acid; gradual, smooth boundary.

B3—27 to 50 inches, red (2.5YR 4/6) fine sandy loam; single grain; very friable; very strongly acid; gradual, smooth boundary.

Shubuta series: Soils of the Shubuta series are on uplands of the Coastal Plain on slopes of 2 to 45 percent. They are acid and moderately well drained. Shubuta soils occur with Ruston, Ora, Boswell, and Cuthbert soils throughout the county. Most of the acreage is in forest, but areas on the more gentle slopes are in crops and pasture.

Profile of Shubuta fine sandy loam, 5 to 8 percent slopes (7 miles southeast of Quitman and 200 yards east of International Paper Co. headquarters; in woods on north side of road):

A1—0 to 4 inches, dark-gray (10YR 4/1) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; some mixing of material from A2 horizon; strongly acid; clear, smooth boundary.

A2—4 to 11 inches, yellowish-brown (10YR 5/4) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; few root channels and rotted roots; strongly acid; clear, smooth boundary.

B21t—11 to 21 inches, red (2.5YR 4/6) sandy clay loam; moderate, fine and medium, subangular blocky structure; friable when moist, slightly plastic when wet; patchy clay films on ped faces; few fine roots; very strongly acid; clear, smooth boundary.

B22t 21 to 31 inches, red (2.5YR 4/8) clay loam; many, fine and medium, distinct and faint, brownish-yellow (10YR 6/6) and red (2.5YR 5/6) mottles; moderate, fine and medium, subangular and angular blocky structure; friable; clay films on ped faces; few roots; very strongly acid; gradual, wavy boundary.

B23t—31 to 46 inches, red (2.5YR 4/8) clay; many, fine and medium, distinct, brownish-yellow (10YR 6/6) and dark-red (10R 3/6) mottles; moderate, fine and medium, angular and subangular blocky structure; friable; clay films on ped faces; few fine roots; few black concretions; very strongly acid; gradual, smooth boundary.

B3t—46 to 60 inches, mottled dark-red (10R 3/6), brownish-yellow (10YR 6/6), and red (2.5YR 4/8) sandy clay loam; mottles are many, fine and medium, faint and distinct; weak and moderate, coarse, angular blocky and subangular blocky structure; friable; patchy clay films on ped faces; very strongly acid.

Red-Yellow Podzolic Soils Grading Toward Reddish-Brown Lateritic Soils.—Orangeburg soils are Red-Yellow Podzolic soils that have some characteristics of Reddish-Brown Lateritic soils. They have a thick, dark-red subsoil.

Orangeburg series: Soils of the Orangeburg series are on the uplands of the Coastal Plain on slopes of 5 to 35 percent. They are acid and well drained. Orangeburg soils occur with Ruston, Eustis, and Ora soils throughout the county. Most of the acreage is in forest, but areas on the more gentle slopes are used for pasture and crops.

Profile of Orangeburg fine sandy loam, 5 to 8 percent slopes (1½ miles west of Union Baptist Church; in woods on east side of local road):

Ap—0 to 3 inches, dark-brown to brown (7.5YR 4/4) fine sandy loam; weak, fine, granular structure; very friable; few roots; strongly acid; clear, smooth boundary.

A2—3 to 11 inches, strong-brown (7.5YR 5/6) fine sandy loam; weak, fine, granular structure; very friable; few roots; strongly acid; abrupt, smooth boundary.

B21t—11 to 26 inches, dark-red (2.5YR 3/6) loam to clay loam; moderate, fine and medium, subangular blocky structure; friable; strongly acid; clear, smooth boundary.

B22t—26 to 43 inches, dark-red (10R 3/6) loam; moderate, fine and medium, subangular blocky structure; friable; few brown concretions; strongly acid; gradual, smooth boundary.

B3—43 to 60 inches, dark-red (10R 3/6) sandy loam; weak, fine, subangular blocky structure; friable; few brown concretions; strongly acid.

Red-Yellow Podzolic Soils Grading Toward Low-Humic Gley Soils.—In this county, Wahee soils are Red-Yellow Podzolic soils that have some characteristics of the Low-Humic Gley soils.

Wahee series: Soils of the Wahee series are on stream terraces of the Coastal Plain on slopes of 0 to 2 percent. They developed in old alluvium that is medium textured to fine textured and are acid and somewhat poorly drained. Wahee soils occur with Flint, Stough, and Leaf soils throughout the country. Most of the acreage is in forest and pasture.

Profile of Wahee fine sandy loam (5 miles south of Enterprise School, one-fourth mile east of dirt road; in pasture on west side of the Chickasawhay River):

Ap—0 to 3 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; few roots of small trees and grasses; very strongly acid; abrupt, smooth boundary.

A2—3 to 8 inches, brown (10YR 4/3) very fine sandy loam; weak, very fine, granular structure; very friable; few large roots and few small grass roots; few voids; strongly acid; clear, wavy boundary.

B21t—8 to 13 inches, yellowish-brown (10YR 5/6) clay loam; weak, fine, subangular blocky structure; friable; few large roots; strongly acid; clear, smooth boundary.

B22t—13 to 23 inches, yellowish-brown (10YR 5/4) clay loam to clay; many, fine and medium, distinct, light brownish-gray (2.5Y 6/2) and red (2.5YR 4/8) mottles; moderate, medium, subangular blocky structure; firm; strongly acid; clear, wavy boundary.

B3g—23 to 48 inches, light brownish-gray (2.5Y 6/2) clay; common, fine, prominent, red (2.5YR 4/8) and strong-brown (7.5YR 5/6) mottles; strong, medium, subangular blocky structure; firm; strongly acid.

Red-Yellow Podzolic Soils Grading Toward Grumusols.—Vaiden soils in Clarke County are the Red-Yellow Podzolic soils that have some characteristics of Grumusols. They have a surface layer of loam to clay and a subsoil of yellow or yellowish-brown clay.

Vaiden series: Soils of the Vaiden series are on prairie uplands of the Coastal Plain on slopes of 0 to 12 percent. These soils are somewhat poorly drained. They are underlain by very plastic clay that, in turn, is underlain by calcareous marl. Vaiden soils occur with Eutaw, Oktibbeha, Sumter, and Houston soils throughout the prairie section of the county. Most of the area is in forest, but small areas are in crops and pasture.

Profile of Vaiden clay, deep, 2 to 5 percent slopes, eroded (4 miles east of Shubuta and 50 feet south of local road; in woods):

A—0 to 3 inches, dark grayish-brown (10YR 4/2) clay; moderate, fine, granular structure; friable; few fine roots; strongly acid; abrupt, smooth boundary.

B21—3 to 6 inches, yellowish-brown (10YR 5/6) clay; few, fine, faint, pale-brown (10YR 6/3) mottles; moderate, fine, angular blocky structure; firm when moist, very plastic when wet; strongly acid; clear, smooth boundary.

B22t—6 to 14 inches, yellowish-brown (10YR 5/8) clay; common, fine, distinct, pale-brown (10YR 6/3) and red (2.5YR 4/8) mottles; moderate, fine, angular blocky structure; firm when moist, very plastic when wet; strongly acid; gradual, smooth boundary.

B23t—14 to 27 inches, mottled pale-brown (10YR 6/3), yellowish-brown (10YR 5/6), red (2.5YR 4/6), and gray (10YR 6/1) clay; moderate, fine, angular blocky structure; firm when moist, very plastic when wet; strongly acid; gradual, smooth boundary.

Cg—27 to 38 inches, mottled light-gray (10YR 7/1), yellowish-brown (10YR 5/6), and weak-red (2.5YR 4/2) clay; massive; firm when moist, very plastic when wet; medium acid.

RED-YELLOW PODZOLIC SOILS WITH FRAGIPANS. In this county, the Red-Yellow Podzolic soils that have fragipans are in the Ora, Prentiss, Savannah, and Tilden series. These soils have a cemented pan at a depth of 24 to 36 inches.

Ora series: Soils of the Ora series are on uplands of the Coastal Plain on slopes of 0 to 12 percent. They are acid, are moderately well drained, and have weak to moderate fragipans. Ora soils occur with Ruston, Savannah, and Pheba soils throughout the county. Most of the acreage has been cleared and is used for crops and pasture.

Profile of Ora fine sandy loam, 2 to 5 percent slopes, eroded (one-half mile west of Beat 4 School; in a cultivated field on south side of blacktop road):

Ap—0 to 5 inches, brown (10YR 5/3) fine sandy loam; weak, fine and medium, granular structure; very friable; many small roots; medium acid; abrupt, smooth boundary.

B1—5 to 10 inches, yellowish-red (5YR 5/6) fine sandy loam; few, fine, faint, light-gray (10YR 7/2) mottles; weak, fine and medium, subangular blocky structure; friable; few fine roots; strongly acid; gradual, smooth boundary.

B21t—10 to 24 inches, yellowish-red (5YR 4/6) sandy clay loam; moderate, fine and medium, subangular blocky structure; friable; strongly acid; clear, smooth boundary.

B22xt—24 to 39 inches, yellowish-red (5YR 5/6) fine sandy loam; common, fine, distinct, light yellowish-brown (10YR 6/4) mottles; weak, medium and coarse, subangular blocky structure; compact, brittle, and hard; strongly acid; clear, irregular boundary.

B23xt—39 to 58 inches, yellowish-red (5YR 4/8) to red (2.5YR 4/8) light sandy clay loam; common, medium, distinct, reddish-yellow (7.5YR 6/6) mottles; moderate, fine and medium, subangular blocky structure; compact, hard, and brittle; strongly acid; gradual, irregular boundary.

B24xt—58 to 74 inches, yellowish-red (5YR 5/8) sandy clay loam; many, fine, distinct, reddish-yellow (7.5YR 6/6) and red (2.5YR 4/8) mottles; massive to weak, fine and medium, subangular blocky structure; hard; few voids and vesicles; few, fine, black concretions; gray coatings on ped faces and cracks; very strongly acid.

Prentiss series: Soils of the Prentiss series are on stream terraces of the Coastal Plain on slopes of 0 to 5 percent. They are acid and moderately well drained and developed in medium-textured old alluvium. Prentiss soils occur with Cahaba, Tilden, and Stough soils throughout the county. Most of the acreage has been cleared and is used for crops and pasture.

Representative profiles are described in the section "Laboratory Data."

Savannah series: Soils of the Savannah series are on uplands of the Coastal Plain on slopes of 0 to 8 percent. They are acid, are moderately well drained, and have moderately developed fragipans. Savannah soils occur with Ruston, Ora, and Pheba soils throughout the county. Most of the acreage has been cleared and is used for crops and pasture.

Profile of Savannah fine sandy loam, 2 to 5 percent slopes, eroded (1½ miles west and ¾ mile north of Hale Community; in a cultivated field 50 feet west of gravel road):

Ap—0 to 4 inches, brown (10YR 5/3) fine sandy loam; weak, very fine, granular structure; very friable; many fine roots; some material from other horizons; strongly acid; abrupt, smooth boundary.

A2—4 to 7 inches, light yellowish-brown (10YR 6/4) fine sandy loam; weak, fine, subangular blocky structure; very friable; many fine roots; strongly acid; clear, smooth boundary.

B2—7 to 22 inches, yellowish-brown (10YR 5/8) loam; weak, fine and medium, subangular blocky structure; friable; few, fine, brown concretions; strongly acid; clear, smooth boundary.

B'21x and A'2x—22 to 32 inches, brownish-yellow (10YR 6/6) to yellowish-brown (10YR 5/6) loam; few, fine, distinct, strong-brown (7.5YR 5/6) and very pale brown (10YR 7/4) mottles; weak, fine and medium, subangular blocky structure; friable when removed, compact and brittle in place; few, fine, brown concretions; many vesicles; strongly acid; gradual, smooth boundary.

B'22xt—32 to 49 inches, mottled strong-brown (7.5YR 5/6), light-gray (10YR 7/1), yellowish-brown (10YR 5/6), and yellowish-red (5YR 5/6) fine sandy loam; moderate, medium, subangular blocky structure; friable when removed, compact and brittle in place; few brown concretions; many vesicles; strongly acid; gradual, smooth boundary.

B'23—49 to 65 inches, mottled light-gray (10YR 7/1), yellowish-brown (10YR 5/8), and red (10R 4/6) sandy clay loam; moderate, medium, subangular blocky structure; friable; strongly acid.

Tilden series: Soils of the Tilden series are on stream terraces of the Coastal Plain on slopes of 0 to 8 percent. These acid, moderately well drained soils developed in medium-textured, old alluvium and have weak to moderate fragipans. Tilden soils occur with Cahaba, Prentiss, and Stough soils throughout the county. Most of the acreage has been cleared and is used for crops and pasture.

Profile of Tilden fine sandy loam, 2 to 5 percent slopes (0.6 mile south of courthouse in Quitman and 0.2 mile east of U.S. Highway No. 45; in a cultivated field):

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable when moist, slightly hard when dry; common fine roots; strongly acid; abrupt, smooth boundary.

B1—8 to 12 inches, yellowish-red (5YR 5/6) loam; weak, fine, subangular blocky structure; very friable when moist, slightly hard when dry; common fine roots; root channels and wormholes filled with soil material from Ap horizon; strongly acid; abrupt, smooth boundary.

B21t—12 to 22 inches, yellowish-red (5YR 4/6) loam or light clay loam; moderate, fine and medium, subangular blocky structure; friable when moist, hard when dry, slightly plastic when wet; few fine roots; few, fine brown concretions and few, fine, black concretions; strongly acid; abrupt, smooth boundary.

B22t 22 to 25 inches, strong-brown (7.5YR 5/6) loam or sandy loam; moderate, fine and medium, subangular blocky structure; friable when moist, hard when dry, slightly plastic when wet; few fine roots; few fine concretions of iron and manganese; strongly acid; abrupt, smooth boundary.

B23xt—25 to 45 inches, strong-brown (7.5YR 5/6) fine sandy loam or loam; common, fine, faint and distinct, pale-brown (10YR 6/3) and yellowish-red (10YR 4/6) mottles; moderate, fine and medium, subangular blocky structure; friable when moist, hard when dry, slightly plastic when moist; vesicular; few fine concretions of iron and manganese; strongly acid; abrupt, smooth boundary.

C—45 to 54 inches, mottled yellowish-brown (10YR 5/6), light yellowish-brown (10YR 6/4), strong-brown (7.5YR 5/6), and red (2.5YR 4/8) sandy clay loam; mottles are many, medium and coarse, distinct and prominent; massive; friable when moist, hard when dry, slightly plastic and slightly sticky when wet; strongly acid.

Grumusols

The soils of the Grumusol great soil group are of the intrazonal order. These soils are typically clay and have moderate to strong structure in the upper horizons. The soils have a high coefficient of expansion, and they shrink and swell markedly when the moisture content changes. During this shrinking and swelling, the soil cracks and material from upper horizons drops into lower ones. Because the soils are churned and mixed continually, horizon differentiation is partly offset.

Grumusols have prominent A1 horizons but lack B horizons. Generally, they have dull colors and a low chroma, and they are not well drained.

In Clarke County soils of the Houston and West Point series are Grumusols.

Houston series: Soils of the Houston series are on prairie uplands on slopes of 0 to 5 percent. They developed from marl or strongly calcareous clay and are neutral to strongly alkaline and moderately well drained. Houston soils occur with Sumter and Vaiden soils throughout the county. Most of the acreage is used for pasture.

Profile of Houston clay, 0 to 2 percent slopes (5 miles east and 1 mile north of Shubuta; in a pasture 100 yards east of dirt road):

A11—0 to 6 inches, black (5Y 2/1) clay; moderate, medium, granular structure; firm when moist, very plastic when wet; few, fine, reddish-brown concretions; many fine roots; moderately alkaline; gradual, smooth boundary.

A12—6 to 14 inches, black (5Y 2/1) clay; moderate, medium, subangular blocky structure; firm when moist, very plastic when wet, hard when dry; few roots; moderately alkaline; clear, smooth boundary.

AC—14 to 26 inches, very dark-gray (5Y 3/1) clay; few, fine, distinct, olive-brown (2.5Y 4/4) mottles; moderate, medium, subangular blocky structure; firm when moist, very plastic when wet, hard when dry; few roots; few lime nodules; common, fine, brown concretions; few slickensides; moderately alkaline; clear, smooth boundary.

C—26 to 38 inches, mottled olive (5Y 5/3), dark-gray (5Y 4/1), and light olive-brown (2.5Y 5/6) clay; massive; firm when moist, very plastic when wet, hard when dry; many fine and medium lime nodules; many, fine, reddish-brown concretions; few slickensides; moderately alkaline.

West Point series: Soils of the West Point series are on the flood plains of the prairie. They formed in alluvium washed from prairie uplands and are neutral to moderately alkaline and moderately well drained. West Point soils occur with Houlka soils throughout the county. Most of the acreage is used for pasture.

Profile of West Point clay (4½ miles east of Shubuta and ¼ mile south of a gravel road; in a pasture on east side of Dry Creek):

A—0 to 6 inches, black (5Y 2/1) clay; moderate, fine, granular structure; friable to firm when moist, plastic when wet; many fine roots; neutral to slightly alkaline; clear, smooth boundary.

AC—6 to 18 inches, very dark gray (5Y 3/1) clay; massive; firm when moist, very plastic when wet, hard when dry; few fine roots; few, fine, brown concretions and lime nodules; slightly to moderately alkaline; clear, smooth boundary.

C—18 to 38 inches, very dark gray (5Y 3/1) clay; common, fine, distinct, dark yellowish-brown (10YR 4/4) mottles; massive; firm when moist, hard when dry, very plastic when wet; few, fine, brown concretions; moderately alkaline.

Low-Humic Gley soils

The soils in the Low-Humic Gley great soil group are of the intrazonal order. These soils developed under mixed grasses and forest in humid regions. They are poorly drained, have a thin A horizon that contains a moderately large amount of organic matter, and are underlain by mottled gray and brown gleyed material.

In this county some Low-Humic Gley soils are representative of the great soil groups, and some grade toward Grumusols.

Representative Low-Humic Gley Soils.—Representative Low-Humic Gley soils in this county are in the Bibb and Chastain series.

Bibb series: Soils of the Bibb series are on the bottom lands of the Coastal Plain. These poorly drained soils formed in alluvium that washed from the uplands. Bibb soils occur with Chastain, Mantachie, and Iuka soils throughout the county. Most of the acreage is in forest.

Profile of Bibb fine sandy loam (2 miles west of Quitman and 1 mile northwest of old U.S. Highway No. 18; in woods 50 yards north of a dirt road):

Ag—0 to 5 inches, dark-gray (10YR 4/1) fine sandy loam; weak, fine, granular structure; very friable; many roots; very strongly acid; clear, smooth boundary.

C1g—5 to 14 inches, light brownish-gray (10YR 6/2) fine sandy loam; many, medium, distinct and faint, yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; friable; few, fine, soft, brown concretions; many roots; strongly acid; gradual, smooth boundary.

C2g—14 to 29 inches, light brownish-gray (10YR 6/2) heavy sandy loam; few, fine, distinct and faint, yellowish-brown (10YR 5/6) mottles; weak, fine, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

C3g—29 to 40 inches, light brownish-gray (10YR 6/2) heavy sandy loam; many, fine, distinct, yellowish-brown (10YR 5/6) and strong-brown (7.5YR 5/8) mottles; weak, medium, subangular blocky structure; friable; strongly acid.

Chastain series: Soils of the Chastain series formed on the flood plains of the Coastal Plain in alluvium washed from the uplands. They are acid and poorly drained. Chastain soils occur with Bibb and Mantachie soils throughout the county. Most of the acreage is in forest.

Profile of Chastain fine sandy loam (2 miles west of Quitman and ½ mile north of old Highway No. 18; in woods 50 yards west of a dirt road):

Ag—0 to 4 inches, dark-gray (10YR 4/1) fine sandy loam; weak, fine, granular structure; friable; many fine roots; very strongly acid; clear, smooth boundary.

C1g—4 to 12 inches, light brownish-gray (10YR 6/2) fine sandy loam; many, medium, distinct and faint, yellowish-brown (10YR 5/6) mottles; weak, fine, granular structure; friable; few roots; strongly acid; abrupt, smooth boundary.

C2g—12 to 25 inches, gray (10YR 5/1) sandy clay; many, fine, distinct, yellowish-brown (7.5YR 5/6) mottles; massive; firm when moist, hard when dry; plastic when wet; strongly acid; gradual, smooth boundary.

C3g—25 to 40 inches, gray (10YR 6/1) clay loam; many, fine, distinct, strong-brown and yellowish-brown (10YR 5/8) mottles; massive; firm when moist, hard when dry, plastic when wet; strongly acid.

Low-Humic Gley Soils Grading Toward Grumusols.—In Clarke County, Low-Humic Gley soils that have some characteristics of Grumusols are in the Eutaw series.

Eutaw series: Soils of the Eutaw series are on prairie uplands on slopes of 0 to 2 percent. These somewhat

poorly drained, acid soils are underlain by heavy clay that is plastic and alkaline. Eutaw soils occur with Vaiden, Sumter, and Houston soils throughout the county. Most of the acreage is in forest.

Profile of Eutaw clay, deep (4 miles south of Pachuta and ¼ mile east of U.S. Highway No. 11; in woods):

A1—0 to 3 inches, dark grayish-brown (2.5Y 5/2) clay; weak, fine, granular structure and weak, very fine, subangular blocky structure; friable; many fine grass roots; slightly acid; abrupt, smooth boundary.

C1g—3 to 6 inches, olive-gray (5Y 5/2) clay; few, fine, distinct and faint, olive-yellow (5Y 6/6) mottles; moderate, fine and medium, subangular blocky structure; firm when moist, very plastic when wet; few, fine, black concretions; few fine roots; medium acid; clear, smooth boundary.

C2g—6 to 11 inches, gray (5Y 5/1) clay; many, fine, distinct and faint, olive-yellow (5Y 6/6) and yellow (5Y 7/6) mottles; moderate, medium, subangular blocky structure; firm when moist, very plastic when wet; few small wormholes and root channels; very few fine roots; medium acid; clear, wavy boundary.

C3g—11 to 17 inches, gray (5Y 5/1) clay; common, fine, distinct and faint, olive-yellow (5Y 6/6) mottles; strong, medium to coarse, angular blocky structure; firm when moist, very plastic when wet; medium acid; clear, wavy boundary.

C4g—17 to 38 inches, gray (5Y 5/1) clay; few, fine, distinct and faint, olive-yellow (5Y 6/6) mottles; strong, coarse, angular blocky structure; firm when moist, very plastic when wet; medium acid.

Humic Gley soils

The soils of the Humic Gley great soil group are in the intrazonal order. These soils developed in humid and subhumid regions under swamp forest or herbaceous marsh plants. These soils contain a large amount of organic matter and are mostly medium acid to mildly alkaline (*15*). Their A horizon is thick, gleyed, and dark colored.

The only Humic Gley soils in Clarke County are in the Johnston series.

Johnston series: Soils of the Johnston series formed on flood plains of the Coastal Plain in alluvial material that washed from the uplands. They are very strongly acid and poorly drained. Johnston soils occur with Bibb, Chastain, and Mantachie soils throughout the county. Most of the acreage is in forest.

Profile of Johnston loam (3½ miles east-northeast of Stonewall and 50 feet north of blacktop road):

A11—0 to 4 inches, very dark gray (10YR 3/1) loam; weak, fine, granular structure; very friable; many roots; much organic matter; extremely acid; abrupt, smooth boundary.

A12g—4 to 26 inches, black (N 2/0) loam; weak, fine, granular structure; very friable; very high in organic matter; extremely acid; gradual, smooth boundary.

A13g—26 to 30 inches, black (N 2/0) fine sandy loam; weak, fine, granular structure; very friable; high in organic matter; very strongly acid; gradual, smooth boundary.

A14g—30 to 42 inches, dark-gray (10YR 3/1) fine sandy loam; weak, fine, granular structure; very friable; very strongly acid.

Planosols

The soils of the Planosol great soil group are in the intrazonal order. They are poorly drained or somewhat poorly drained, acid soils that formed under forests in humid regions that are warm-temperate or tropical. The strongly leached surface layer of these soils is underlain by one or more illuviated layers of clay or other extremely compact material. These layers contrast sharply with the surface layer.

In Clarke County some Planosols have a fragipan, and some have a claypan. Fragipans are very compact layers that are rich in silt, sand, or both.

PLANOSOLS WITH FRAGIPANS.—In Clarke County Planosols that have fragipans are in the Mashulaville, Pheba, and Stough series.

Mashulaville series: Soils of the Mashulaville series are on uplands of the Coastal Plain on slopes of 0 to 2 percent. They developed in unconsolidated beds of acid sands, sandy loams, and sandy clays. These acid, poorly drained soils have strongly developed fragipans. Mashulaville soils occur with Pheba, Ora, and Savannah soils throughout the county. Most of the acreage is in forest and pasture.

Profile of Mashulaville loam (1 mile west of Harmony Baptist Church and ½ mile south of State Highway No. 18; in pasture 200 yards east of local road):

Ap—0 to 5 inches, dark-gray (10YR 4/1) loam; weak, fine, granular structure; friable; numerous very fine fibrous roots; very strongly acid; abrupt, smooth boundary.

A21g—5 to 9 inches, light grayish-brown (10YR 6/2) fine sandy loam; few, fine, distinct, yellow-brown (10YR 5/8) mottles; weak, fine, subangular blocky structure; friable; common, fine, brown and black concretions; numerous very fine fibrous roots; very strongly acid; clear, wavy boundary.

A22g 9 to 19 inches, pale-brown (10YR 6/3) fine sandy loam; many, fine, distinct, yellowish-brown (10YR 5/8) mottles and many, fine, faint, light brownish-gray (10YR 6/2) mottles; weak, medium, subangular blocky structure; friable; few, fine and medium, brown and black concretions; very strongly acid; clear, wavy boundary.

A22xg and B21xg—19 to 26 inches, mottled light-gray (10YR 6/3), pale-brown (10YR 6/3), and yellowish-brown (10YR 5/8) fine sandy loam; moderate, medium, subangular blocky structure; hard, compact, and brittle; many vesicles; few black and brown concretions; very strongly acid; gradual, wavy boundary.

B22xtg 26 to 42 inches, gray (10YR 6/1) clay loam; many, medium, distinct, yellowish-brown (10YR 5/8) mottles; massive; firm when moist, plastic when wet, hard when dry; very strongly acid.

Pheba series: Soils of the Pheba series are on uplands of the Coastal Plain on slopes of 0 to 5 percent. They developed in unconsolidated beds of acid sands, sandy loams, and sandy clays. They are acid, are somewhat poorly drained, and have moderately to strongly developed fragipans. Pheba soils occur with Savannah, Ora, and Mashulaville soils throughout the county. A large part of the acreage has been cleared and is used for crops and pasture.

Profile of Pheba fine sandy loam, 0 to 2 percent slopes (1.9 miles east of Pachuta and 100 feet south of State Route 18; in a pasture):

Ap1—0 to 2 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, very fine, granular structure; friable; many roots; some material from other horizons; strongly acid; clear, smooth boundary.

Ap2—2 to 7 inches, grayish-brown (10YR 5/2) fine sandy loam; weak, very fine, granular structure; very friable; many roots; some material from other horizons; strongly acid; abrupt, smooth boundary.

B2—7 to 15 inches, light yellowish-brown (2.5Y 6/4) loam; few, fine, faint, light-gray (2.5Y 7/2) mottles; weak, medium, subangular blocky structure; friable; few roots; few brown concretions; strongly acid; clear, smooth boundary.

A'2xg—15 to 19 inches, light brownish-gray (2.5Y 6/2) loam; common, fine, faint, light-gray (2.5Y 7/2) mottles and common, fine, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; friable when removed, compact and brittle in place; common, fine and medium, brown and black concretions; few vesicles; few roots; strongly acid; gradual, smooth boundary.

B'21xt—19 to 29 inches, mottled light yellowish-brown (2.5Y 6/4), yellowish-brown (10YR 5/6), and light-gray (10YR 7/1) heavy loam to loam; moderate, medium, subangular blocky structure; hard, compact and brittle; many, fine and medium, brown concretions; many vesicles; strongly acid; gradual, smooth boundary.

B'22xt—29 to 40 inches, light-gray (10YR 7/1) sandy clay loam; many, medium, distinct, brownish-yellow (10YR 6/6) and yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; hard, compact and brittle; common to many, fine and medium, brown concretions; strongly acid.

Stough series: Soils of the Stough series are on stream terraces of the Coastal Plain on slopes of 0 to 2 percent. These somewhat poorly drained, acid soils formed in medium-textured, old alluvium and have moderately to strongly developed fragipans. Stough soils occur with Prentiss, Tilden, and Mashulaville soils throughout the county. A large part of the acreage is cleared and used for crops and pasture.

Representative profiles are described in the section "Laboratory Data."

PLANOSOLS WITH CLAYPAN.—In Clarke County, Leaf soils are the only Planosols that have a claypan.

Leaf series: Soils of the Leaf series are on stream terraces of the Coastal Plain on slopes of 0 to 2 percent. These poorly drained, acid soils formed in old alluvium that is medium and fine textured. They are underlain by heavy clay. Leaf soils occur with Mashulaville and Stough soils throughout the county. Most of the acreage is in forest.

Profile of Leaf fine sandy loam (3½ miles south of De Soto and 350 feet east of U.S. Highway No. 45; in woods):

A1g—0 to 3 inches, grayish-brown (10YR 5/2) fine sandy loam; weak, very fine, granular structure; very friable; many fine roots; some material from lower horizons; strongly acid; clear, smooth boundary.

A2g—3 to 10 inches, light brownish-gray (10YR 6/2) fine sandy loam; weak, very fine, granular structure; very friable; many organic-matter stains; strongly acid; abrupt, smooth boundary.

Btg—10 to 24 inches, mottled gray (10YR 6/1) and strong-brown (7.5YR 5/8) clay; moderate, fine and medium, angular and subangular blocky structure; firm when moist, very plastic when wet; many clay films on ped faces; few brown concretions; strongly acid; diffuse, smooth boundary.

Cg—24 to 40 inches, light brownish-gray (2.5Y 6/2) clay; common, fine, distinct, strong brown (7.5YR 5/8) mottles; massive; firm when moist, very plastic when wet; strongly acid.

Rendzinas

The soils of the Rendzina great soil group are in the intrazonal order. These soils have a dark grayish-brown to black surface layer that is underlain by gray to yellow, generally soft, calcareous material. They developed under grass and some broad-leaved trees in cool to hot, humid or semiarid regions. The process of calcification affected their development (*3*).

In Clarke County, only the Sumter soils are in the Rendzina great soil group.

Sumter series: Soils of the Sumter series are on prairie uplands on slopes of 2 to 12 percent. These moderately well drained soils are underlain by Selma chalk and are mildly alkaline or moderately alkaline. Sumter soils occur with Houston and Vaiden soils throughout the county. Most of the acreage is in pasture.

Profile of Sumter clay, 2 to 5 percent slopes, eroded (1 mile west of Melvin, Ala., and 1.2 miles south of the Melvin-Shubuta road; in a pasture 50 feet east of local road):

A11—0 to 5 inches, very dark grayish-brown (2.5Y 3/2) clay; moderate, fine, subangular blocky structure; firm when moist, plastic and sticky when wet; common fine nodules of lime; many fine roots; moderately alkaline; abrupt, wavy boundary.

A12—5 to 8 inches, very dark grayish-brown (2.5Y 3/2) clay; moderate, fine, angular blocky structure; firm when moist, plastic and sticky when wet; many fine and medium nodules; few fine roots; moderately alkaline; clear, wavy boundary.

C1 8 to 15 inches, olive-yellow (2.5Y 6/6) clay; moderate, fine, angular blocky structure; firm when moist, plastic when wet; many fine and medium nodules of lime; few roots; some material from horizon above; moderately alkaline; gradual, smooth boundary.

C2—15 to 36 inches, yellow (2.5Y 7/6) clay; few, fine, faint, olive-yellow (2.5Y 6/6) mottles; moderate, fine and medium, angular blocky structure; firm when moist, plastic when wet; many medium and coarse nodules of lime; moderately alkaline.

Regosols

The soils of the Regosol great soil group are in the azonal order. These excessively drained soils consist of sand that has little profile development. They formed in humid and arid regions under scanty grass and scrubby forest (*15*).

The only Regosols in Clarke County are in the Eustis series.

Eustis series: Soils of the Eustis series are on uplands and terraces of the Coastal Plain on slopes of 0 to 35 percent. They are acid and excessively drained. Eustis soils occur with Ruston and Orangeburg soils throughout the county. Most of the acreage is in forest, but some areas on the more gentle slopes have been cleared and are used for crops and pasture.

Profile of Eustis loamy sand, 8 to 12 percent slopes (1¼ miles south of Middleton and 100 yards east of local road; in woods):

Ap—0 to 9 inches, dark-brown (10YR 3/3) loamy sand; weak, fine, granular structure; very friable; many fine roots; medium acid; clear, wavy boundary.

C1—9 to 16 inches, brown (7.5YR 4/4) loamy sand; weak, fine, granular structure; loose; very few roots; strongly acid; gradual, wavy boundary.

C2—16 to 30 inches, yellowish-red (5Y 4/6) fine sand; structureless; loose; very few fine roots; strongly acid; gradual, wavy boundary.

C3—30 to 42 inches, yellowish-red (5Y 5/8) fine sand; structureless; loose; strongly acid; gradual, smooth boundary.

C4—42 to 55 inches, yellowish-red (5YR 5/6) fine sand; structureless; loose; strongly acid.

Alluvial soils

Alluvial soils are in the azonal order. They developed on first bottoms along streams and in upland depressions in material that has been transported by water and deposited fairly recently. The alluvium has been changed little by the soil-forming processes. These soils have medium to slow internal drainage.

Some Alluvial soils in Clarke County are representative of the great soil group, and some grade toward Low-Humic Gley soils.

Representative Alluvial Soils.—In Clarke County Alluvial soils representative of the great soil group are in the Bruno, Houlka, and Iuka series.

Bruno series: Soils of the Bruno series are on nearly level flood plains of the Coastal Plain. These somewhat excessively drained soils formed in alluvium washed from the uplands. Bruno soils occur with Iuka and Mantachie soils throughout the county. Most of the acreage is in pasture and trees.

Profile of Bruno loamy fine sand (2 miles west of Stonewall and ⅛ mile east of Chickasawhay River; in a pasture 50 feet south of blacktop road):

Ap—0 to 8 inches, very dark grayish-brown (10YR 3/2) loamy fine sand; weak, fine, granular structure; very friable; many small fine roots; strongly acid; clear, smooth boundary.

AC—8 to 14 inches, dark-brown (10YR 4/3) loamy fine sand and streaks of light-gray (10YR 7/2) loamy sand; weak, fine, granular structure; very friable; few fine roots; strongly acid; gradual, wavy boundary.

C1—14 to 26 inches, brown (10YR 5/3) loamy fine sand and streaks of light-gray (10YR 7/2) loamy sand; structureless; very friable; strongly acid; gradual, wavy boundary.

C2—26 to 40 inches, light yellowish-brown (10YR 6/4) loamy fine sand; structureless; very friable; strongly acid.

Houlka series: Soils of the Houlka series are on nearly level flood plains of the prairie. These somewhat poorly drained, acid soils formed in alluvium washed from uplands. In this county Houlka soils occur with West Point soils throughout the prairie. Most of the acreage is in pasture or trees.

Profile of Houlka clay (1 mile south of Pachuta and ¼ mile east of U.S. Highway No. 11; in woods 30 yards south of Pachuta Creek):

A—0 to 5 inches, very dark gray (10YR 3/1) clay; moderate, fine and medium, granular structure; friable; many fine roots; slightly acid; abrupt, smooth boundary.

AC—5 to 10 inches, dark-brown (10YR 4/3) clay; few, fine, faint, light brownish-gray (10YR 6/2) mottles; moderate, fine and medium, granular structure; firm when moist, very hard when dry, plastic when wet; few tree roots; medium acid; clear, smooth boundary.

C1g—10 to 22 inches, mottled light brownish-gray (10YR 6/2), brown (7.5YR 4/4), and yellowish-brown (10YR 5/6) clay; massive; firm when moist, very hard when dry, very plastic when wet; strongly acid; gradual, smooth boundary.

C2g—22 to 38 inches, mottled gray (10YR 5/1), strong-brown (7.5YR 5/6), and yellowish-red (5YR 4/6) clay; massive; firm when moist, very hard when dry, very plastic when wet; strongly acid.

Iuka series: Soils of the Iuka series formed on the Coastal Plain in alluvium washed from the uplands. These moderately well drained, acid soils are on nearly level flood plains. Iuka soils occur with Bibb and Mantachie soils throughout the county. Most of the acreage is in forest, but small areas have been cleared and are used for pasture and crops.

Profile of Iuka fine sandy loam (75 yards south of Beat 4 road and 100 feet west of Bucatunna Creek; in woods):

A11—0 to 5 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; many roots; strongly acid; clear, smooth boundary.

A12—5 to 10 inches, brown (10YR 4/3) fine sandy loam; weak, fine, granular structure; very friable; strongly acid; clear, smooth boundary.

AC—10 to 23 inches, brown (10YR 4/3) loam; structureless; very friable; strongly acid; gradual, smooth boundary.

C1—23 to 40 inches, mottled brown (10YR 5/3), light brownish-gray (10YR 6/2), and yellowish-brown (10YR 5/8) fine sandy loam; gray increasing with depth; structureless; friable; few, fine, brown concretions; strongly acid.

Alluvial Soils Grading Toward Low-Humic Gley Soils.—In Clarke County the Mantachie soils are Alluvial soils that have some characteristics of Low-Humic Gley soils.

Mantachie series: Soils of the Mantachie series are on flood plains of the Coastal Plain. These somewhat poorly drained, acid soils formed in alluvium washed from the uplands. Mantachie soils occur with Bibb and Iuka soils throughout the county. Most of the acreage is in forest, but small areas have been cleared and are used for pasture and crops.

Profile of Mantachie fine sandy loam (9 miles southeast of Quitman and ⅛ mile south of the Quitman-Crandall road; in woods ¼ mile east of Tallabogue Creek):

A—0 to 8 inches, brown (10YR 4/3) fine sandy loam; weak, fine, granular structure; very friable; many roots; very strongly acid; clear, smooth boundary.

AC—8 to 14 inches, yellowish-brown (10YR 5/4) fine sandy loam; common, fine, faint, pale-brown (10YR 6/3) and brown (7.5YR 4/4) mottles; weak, fine, granular structure; very friable; few fine roots; strongly acid; clear, smooth boundary.

C1—14 to 30 inches, mottled yellowish-brown (10YR 5/8), gray (10YR 6/1), and light yellowish-brown (10YR 6/4) fine sandy loam; weak, fine and medium, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

C2g—30 to 42 inches, gray (10YR 6/1) sandy clay loam; many, fine and medium, distinct, light yellowish-brown (10YR 6/4) and yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; friable; few, fine, black and brown concretions; strongly acid.

Lithosols

Soils in the Lithosol great soil group are in the azonal order. These soils vary greatly in character, in nature of their soil material, and in relief, stoniness, slope, and other external features. They consist of freshly weathered rock fragments. For the most part, they are shallow and occur in rough and hilly areas where the vegetation is mainly grass and scrubby trees. These soils are stony in many places and commonly have little soil development and no definite horizons. The parent material is exposed in many places (*3*).

The only Lithosols in Clarke County are in the Lauderdale series.

Lauderdale series: Soils of the Lauderdale series are on uplands of the Coastal Plain on slopes of 5 to 45 percent. These well-drained to excessively drained, acid soils are underlain by sandstone. Lauderdale soils occur with Bos-

well, Ruston, and Shubuta soils, mostly in the northern part of the county. Most of the acreage is in forest.

Profile of Lauderdale stony fine sandy loam, 12 to 45 percent slopes (4 miles east of Clarkedale School and 50 feet west of dirt road; in woods):

A1 0 to 7 inches, very dark gray (10YR 3/1) stony fine sandy loam; weak, fine, granular structure; loose; many sandstones and few grass roots; strongly acid; abrupt, wavy boundary.

AC—7 to 12 inches, light brownish-gray (10YR 6/2) sandy clay loam; weak, fine and medium, subangular blocky structure; very friable; many, very small to large, partly weathered sandstones; strongly acid; clear, wavy boundary.

R—12 to 60 inches, horizontal beds of firmly cemented, light-gray (2.5Y 7/2) to light yellowish-brown (2.5Y 6/4) sandstone; platy; yellowish-brown (10YR 4/4) stains on plates; very strongly acid.

Laboratory Data

This section gives laboratory data for the soils of two series, describes field and laboratory methods used in obtaining these data, gives some interpretation of the data, and describes the soil profiles of the soils sampled and analyzed.

Laboratory data on the physical properties of Prentiss and Stough soils are given in table 9. Table 10 gives chemical data. The soils were sampled in 1961 in Clarke County and were analyzed at the Soil Survey Laboratory, Soil Conservation Service, Lincoln, Nebr. The data in tables 9 and 10 are useful to soil scientists in classifying soils and in developing concepts of soil genesis. They are also helpful for estimating available water capacity, fertility, and other soil characteristics that affect soil management.

Field and Laboratory Methods

The samples used in obtaining the data in tables 9 and 10 were collected from pits. The laboratory analyses were made on material that passes a 2-millimeter square-holed sieve after the material had been air dried, rolled, and crushed. Results were reported on an oven-dry basis.

Standard methods of the Soil Survey Laboratory were used to obtain the data. Determinations of clay were made by the pipette method (*7*, *8*, *11*). Bulk density measurements were made on clods at three different moisture levels: (1) at field moisture (the moisture content of the clods as received in the laboratory); (2) at 30 centimeters tension (the adsorbed moisture content of clods subjected to 30 centimeters water tension on a sand capillary column); (3) at oven dryness. The volume was measured by displacement in water; the oven-dry weight was used to calculate the bulk density. Measurements of moisture tension were made on soil pieces and sieved samples by using pressure-plate and pressure-membrane apparatus (*13*, *19*).

The measurements of pH were made on 1:1 suspensions in water and in KCl with a glass electrode. A modification of the Walkley-Black method (*11*) of wet combustion was used to determine the organic carbon. Nitrogen was determined by using a modified procedure of the Association of Official Agricultural Chemists (*2*). The cation-exchange capacity was determined by direct distillation of adsorbed ammonia (*12*). To determine the extractable calcium and magnesium, calcium was separated as calcium oxalate and magnesium as magnesium ammonium phosphate. Extractable sodium and potassium were determined on original ammonium acetate extracts with Beckman DU flame spectrophotometer. The triethanolamine method was used to determine extractable hydrogen. Free iron oxide was extracted from soil with sodium hydrosulfite and determined by titration with standard potassium dichromate (*6*).

Interpretations of Laboratory Data

The Stough and Prentiss soils formed in loamy alluvium that was somewhat stratified. Stratification is indicated below a depth of about 18 inches by particle size distribution. The soils of both series are strongly acid, have low cation-exchange capacity, low base saturation, and low shrink-swell potential. They contain compact pans at about 18 inches. In the pans, bulk density is high (about 1.8 grams per cubic centimeter) and is not affected much by changes in moisture content. The B2 horizon of these soils contains more clay than the horizons above or immediately below, though clay content increases with depth in the lower part of the pan.

The Stough soils contain more organic matter and have a higher carbon-nitrogen ratio than the Prentiss soils. The higher content of organic matter is reflected in higher cation-exchange capacity in the Ap horizon of Stough soils. Stough soils also have lower base saturation and a lower calcium-magnesium ratio than Prentiss soils. Prentiss soils contain slightly more clay in the B2 horizon than Stough soils.

Soil Profiles of the Soils Analyzed

The profiles of the soils listed in tables 9 and 10 are described in the following pages.

Prentiss fine sandy loam.—Profile in carpetgrass and bromegrass pasture, about 1 mile south of Enterprise; 300 feet south of northwest corner of sec. 25, T. 4 N., R. 14 E.

Ap—0 to 5 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine and medium, granular and subangular blocky structure; very friable; common fine roots; wormholes and root channels filled with material from A2 horizon; clear, smooth boundary.

A2—5 to 9 inches, light yellowish-brown (2.5Y 6/4) fine sandy loam; weak, fine and medium, granular and subangular blocky structure; friable; few fine roots; some mixing of material from Ap horizon in wormholes and root channels; few, fine, soft, brown and black concretions; clear, smooth boundary.

B2—9 to 20 inches, yellowish-brown (10YR 5/6) heavy loam; moderate, fine and medium, subangular blocky structure; friable; few fine roots; few, fine, soft, brown concretions; clear, smooth boundary.

A'21x—20 to 26 inches, yellowish-brown (10YR 5/6) fine sandy loam with common, fine, distinct mottles of light yellowish brown (10YR 6/4) and light gray (10YR 7/2); weak, medium, platy structure breaking into fine and medium, subangular blocky structure; friable; few fine roots; few, fine, soft, brown concretions; clear, smooth boundary.

A'22x—26 to 36 inches, mottled light yellowish-brown (10YR 6/4), yellowish-brown (10YR 5/6), and light brownish-gray (10YR 6/2) fine sandy loam; mottles are many, fine, distinct; moderate, medium, platy structure breaking into moderate, medium, subangular blocky structure; friable; few fine roots; many fine voids; few vertical cracks filled with pale-yellow (2.5Y 7/4) sandy loam; gradual, smooth boundary.

TABLE 9.--PHYSICAL PROPERTIES

[Analyses by the Soil Survey Laboratory, Soil Conservation

Soil, location, and survey and laboratory numbers	Horizon	Depth	Particle size distribution					
			Very coarse sand (2.0-1.0 mm.)	Coarse sand (1.0-0.5 mm.)	Medium sand (0.5-0.25 mm.)	Fine sand (0.25-0.10 mm.)	Very fine sand (0.10-0.05 mm.)	Silt (0.05-0.002 mm.)
		Inches	Percent	Percent	Percent	Percent	Percent	Percent
Prentiss fine sandy loam:								
Location: About 1 mile	Ap	0-5	0.2 [1]	2.1 [1]	5.4	39.6	14.1	35.9
south of Enterprise;	A2	5-9	.1	1.3	3.9	31.0	11.2	45.6
300 feet south of NW	B2	9-20	.1	1.2	3.7	28.8	10.6	36.6
corner of sec. 25, T.	A'21x	20-26	< .1	1.6	5.1	38.7	13.4	29.6
4 N., R. 14 E.	A'22x	26-36	< .1	1.7	5.4	41.6	14.5	25.9
Survey No. S61-Miss-12-1-(1-8). Laboratory	B'2x	36-46	< .1	1.7	6.3	42.6	13.4	22.3
Nos. 15128-15135.	C1	46-54	.1	2.6	8.7	44.1	10.3	14.4
	C2	54-70	< .1	.9	3.1	32.8	13.6	22.8
Prentiss fine sandy loam:								
Location: One-half mile	Ap	0-6	.6 [2]	1.6 [2]	3.7	32.9	18.3	39.5
south of Stonewall;	A2	6-11	.1	.7	1.9	24.3	16.8	50.6
400 feet west and 300	B2	11-22	.2	.5	1.4	20.9	14.8	42.9
feet south of NE corner	A'2x	22-28	< .1	.4	1.4	23.7	17.8	39.1
of $SW\frac{1}{4}SE\frac{1}{4}$, sec. 5,	B'21x	28-35	< .1	.4	1.5	25.1	18.2	32.3
T. 3 N., R. 15 E.	B'22x	35-44	< .1	.3	1.5	25.5	19.9	28.2
Survey No. S61-Miss-12-2-(1-8). Laboratory	C1	44-56	< .1	.3	1.6	26.4	19.6	25.1
Nos. 15136-15143.	C2	56-68	< .1		1.6	27.2	19.8	23.5
Stough loam:								
Location: One-half mile	A1	0-4	.4 [2]	1.7	4.2	33.6	12.4	41.1
west of Enterprise;								
300 feet west and 500	AB	4-9	.1 [2]	1.4	3.7	32.0	12.0	39.9
feet south of NW corner	B21	9-17	.2 [2]	1.5	3.9	31.1	11.2	37.7
of $SW\frac{1}{4}SW\frac{1}{4}$, sec.23,	B22	17-24	.9 [2]	2.5 [2]	4.8	32.6	11.1	35.0
T. 4 N., R. 14 E.								
Survey No. S61-Miss-12-3-(1-7). Laboratory	A'2x	24-34	.2 [2]	2.5 [2]	6.0	42.6	13.2	27.2
Nos. 15144-15150.	B'2x	34-50	.2	2.2	6.4	46.1	14.0	15.6
	C1	50-65	.1	1.8	6.2	49.7	14.6	12.0
Stough fine sandy loam:								
Location: One mile west	A1	0-4	.1 [2]	.7 [1]	2.8	56.0	14.2	22.2
and $\frac{1}{2}$ mile northwest of								
Shubuta; 300 feet east	A2	4-11	.1 [2]	.3 [1]	2.4	51.5	13.2	25.9
and 300 feet south of	B21	11-18	.1 [2]	.3 [1]	1.8	42.4	11.6	26.2
NW corner of $SW\frac{1}{4}SW\frac{1}{4}$,	B22x	18-31	.5 [2]	.6 [2]	2.0	40.9	9.4	25.5
sec. 5, T. 10 N., R. 7 W.	B23x	31-41	.6 [2]	.9 [2]	2.5	42.4	10.5	23.3
Survey No. S61-Miss-12-4-(1-7). Laboratory	B3x	41-58	.1 [2]	.5 [2]	2.2	40.2	10.4	20.6
Nos. 15151-15157.	C	58-65	< .1	.3	2.1	41.9	10.2	17.0

[1] Few aggregates, possibly iron or manganese.

OF SELECTED SOILS

Service, Lincoln, Nebr. Absence of data indicated by dashes]

Particle size distribution--Continued			Textural class	Bulk density					Moisture held at tension of--		
Clay (less than 0.002 mm.)	International classification			Field moisture		30-cm. tension		Oven dried	1/3 atmosphere (pieces)	1/3 atmosphere (sieved)	15 atmospheres (sieved)
	0.2-0.02 mm.	0.02-0.002 mm.									
Percent	Percent	Percent		Percent	Gm./cc.	Percent	Gm./cc.	Gm./cc.	Percent	Percent	Percent
2.7	57.5	16.5	Fine sandy loam---	18.3	1.56	17.9	1.56	1.56	-------	-------	1.5
6.9	49.0	27.0	Fine sandy loam---	----	-----	----	----	----	-------	-------	2.5
19.0	43.7	21.1	Loam----------	14.1	1.64	18.9	1.60	1.66	15.3	17.8	7.0
11.6	49.8	16.7	Fine sandy loam---	----	----	----	----	----	-------	-------	4.5
10.9	51.2	14.3	Fine sandy loam---	10.2	1.85	13.3	1.82	1.85	10.8	12.2	3.9
13.7	47.1	14.2	Fine sandy loam---	10.7	1.86	13.6	1.80	1.86	11.5	13.8	5.4
19.8	40.3	8.9	Fine sandy loam to sandy clay loam.	14.5	1.76	17.2	1.70	1.79	12.2	14.6	7.2
26.8	44.6	14.5	Sandy clay loam---	----	-----	----	----	----	------	------	10.6
3.4	65.1	15.0	Fine sandy loam---	17.1	1.57	19.2	1.57	9.0	10.3	------	1.7
5.6	55.4	29.4	Silt loam---------	----	-----	----	----	----	------	------	2.0
19.3	47.8	25.0	Loam----------	14.8	1.62	20.2	1.57	1.64	16.5	18.2	7.6
17.6	52.8	21.6	Loam----------	----	-----	----	----	----	------	------	6.8
22.5	52.0	17.1	Loam----------	----	-----	----	----	----	------	------	9.0
24.6	52.5	14.9	Loam to sandy clay loam.	14.0	1.80	18.2	1.71	1.82	14.9	21.2	9.7
27.0	51.5	13.0	Sandy clay loam---	16.3	1.75	20.3	1.67	1.78	17.6	22.1	10.4
27.6	51.9	11.7	Sandy clay loam---	----	-----	----	----	----	------	------	10.4
6.6	48.7	25.6	Fine sandy loam to loam.	24.0	1.45	25.6	1.42	1.46	------	------	5.0
10.9	47.4	24.7	Loam----------	----	-----	----	----	----	------	------	4.4
14.4	44.9	23.5	Loam----------	17.6	1.62	18.9	1.59	1.64	15.1	17.9	5.6
13.1	44.3	21.5	Loam to fine sandy loam.	14.7	1.72	17.5	1.68	1.72	13.1	16.8	5.2
8.3	49.4	16.9	Fine sandy loam---	11.6	1.84	13.9	1.80	1.84	11.2	12.7	3.0
15.5	48.0	9.1	Fine sandy loam---	14.2	1.79	14.4	1.74	1.80	10.8	13.2	5.3
15.6	49.1	7.4	Fine sandy loam--	----	-----	----	----	----	------	------	6.5
4.0	57.2	12.4	Fine sandy loam to loamy fine sand.	14.0	1.53	17.0	1.49	1.50	9.0	11.2	2.9
6.6	54.2	15.3	Fine sandy loam---	----	-----	----	----	----	------	------	2.0
17.6	46.0	17.0	Fine sandy loam---	----	-----	----	----	----	------	------	6.5
21.1	43.3	16.2	Sandy clay loam---	14.4	1.76	18.0	1.71	1.80	14.8	19.6	7.8
19.8	43.1	15.4	Fine sandy loam to sandy clay loam.	----	-----	----	----	----	------	------	7.0
26.0	41.1	13.9	Sandy clay loam---	15.3	1.74	18.2	1.68	1.76	13.6	19.4	9.1
28.5	41.0	11.2	Sandy clay loam---	----	-----	----	----	----	------	------	10.0

2/ Many aggregates, possibly iron or manganese.

TABLE 10.--CHEMICAL

[Analyses by the Soil Survey Laboratory, Soil Conservation

Soil, location, and survey and laboratory numbers	Horizon	Depth	Reaction (1:1)		Organic matter		
			H_2O	KCl	Organic carbon	Nitrogen	C/N ratio
		Inches	pH	pH	Percent	Percent	
Prentiss fine sandy loam: Location: About 1 mile south of Enterprise; 300 feet south of NW corner of sec. 25, T. 4 N., R. 14 E. Survey No. S61-Miss-12-1-(1-8). Laboratory Nos. 15128-15135.	Ap	0-5	6.0	5.0	0.82	0.054	15
	A2	5-9	6.1	4.9	.17	.016	11
	B2	9-20	4.6	3.6	.16	.019	8
	A'21x	20-26	4.6	3.4	.05	.011	4
	A'22x	26-36	4.7	3.5	.03	-----	---
	B'2x	36-46	4.6	3.4	.02	-----	---
	C1	46-54	4.7	3.3	.01	-----	---
	C2	54-70	4.6	3.1	.02	-----	---
Prentiss fine sandy loam: Location: One-half mile south of Stonewall; 400 feet west and 300 feet south of NE corner of $SW\frac{1}{4}SE\frac{1}{4}$ sec. 5, T. 3 N., R. 15 E. Survey No. S61-Miss-12-2-(1-8). Laboratory Nos. 15136-15143.	Ap	0-6	5.1	3.8	.55	.038	14
	A2	6-11	5.0	3.7	.12	.010	12
	B2	11-22	4.8	3.4	.10	.023	4
	A'2x	22-28	4.6	3.4	.05	.013	4
	B'21x	28-35	4.5	3.2	.04	-----	---
	B'22x	35-44	4.5	3.2	.03	-----	---
	C1	44-56	4.5	3.2	.03	-----	---
	C2	56-68	4.4	3.1	.03	-----	---
Stough loam: Location: One-half mile west of Enterprise; 300 feet west and 500 feet south of NW corner of $SW\frac{1}{4}SW\frac{1}{4}$, sec. 23, T. 4 N., R. 14 E. Survey No. S61-Miss-12-3-(1-7). Laboratory Nos. 15144-15150.	A1	0-4	5.5	4.8	2.15	.104	21
	AB	4-9	4.9	3.8	.44	.026	17
	B21	9-17	4.8	3.5	.20	.019	10
	B22	17-24	4.7	3.5	.05	.013	4
	A'2x	24-34	4.6	3.6	.02	.012	2
	B'2x	34-50	4.5	3.2	.02	-----	---
	C1	50-65	4.4	3.2	.04	-----	---
Stough fine sandy loam: Location: One mile west and ½ mile northwest of Shubuta; 300 feet east and 300 feet south of NW corner of $SW\frac{1}{4}SW\frac{1}{4}$ sec. 5, T. 10 N., R. 7 W. Survey No. S61-Miss-12-4-(1-7). Laboratory Nos. 15151-15157.	A1	0-4	6.6	6.1	1.26	.054	23
	A2	4-11	4.8	3.8	.09	.007	13
	B21	11-18	4.6	3.4	.10	.016	6
	B22x	18-31	4.7	3.3	.05	.015	3
	B23x	31-41	4.7	3.3	.04	-----	---
	B3x	41-58	4.8	3.1	.04	-----	---
	C	58-65	4.6	3.2	.03	-----	---

PROPERTIES OF SELECTED SOILS

Service, Lincoln, Nebr. Absence of data indicated by dashes]

Free iron oxide (Fe_2O_3)	Cation-exchange capacity (by NH_4OAc)	Extractable cations (millequivalents per 100 grams of soil)					Sum of extractable bases and hydrogen	Ca/Mg ratio	Base saturation (by NH_4OAc)
		Ca	Mg	Na	K	H			
Percent	Meq./100 gm. of soil								Percent
0.5	4.1	2.9	0.3	<0.1	0.2	2.5	5.9	9.7	83
.8	2.8	2.0	.3	< .1	.2	1.4	3.9	6.7	89
1.7	5.9	1.9	.3	< .1	.2	6.0	8.4	6.3	41
1.1	4.2	.8	.3	< .1	.1	4.6	5.8	2.7	28
.7	3.7	.1	.5	< .1	< .1	4.2	4.8	.2	16
.8	5.3	.1	.7	< .1	.1	6.2	7.1	.1	17
.8	8.2	.1	1.3	.1	.1	8.8	10.4	.1	20
1.5	12.7	.9	2.4	.1	.2	12.0	15.6	.4	28
.5	2.8	.5	.6	< .1	.1	3.4	4.6	.8	43
.6	2.0	.4	.3	< .1	.1	2.3	3.1	1.3	40
1.8	6.5	1.2	.4	< .1	.3	6.7	8.6	3.0	29
1.5	6.2	1.2	.8	< .1	.2	6.7	8.9	1.5	35
1.5	9.5	1.1	1.2	< .1	.2	9.8	12.3	.9	26
1.3	10.6	.1	1.9	.1	.2	11.7	14.0	----	22
2.4	11.4	< .1	2.4	.1	.2	12.6	15.3	----	24
1.9	12.2	< .1	2.8	.1	.2	11.5	14.6	----	25
.6	9.7	5.1	1.2	< .1	.1	8.8	15.2	4.2	66
.8	4.6	1.3	.8	< .1	.1	4.8	7.0	1.6	48
1.1	5.0	.8	.4	< .1	.1	5.1	6.4	2.0	26
1.8	4.6	< .1	.4	< .1	.1	5.3	5.8	----	11
.7	3.1	.1	.2	.1	.1	3.7	4.2	.5	16
.9	5.7	.1	.6	.1	.1	6.5	7.4	.2	16
1.8	6.6	< .1	.8	.1	.1	7.4	8.4	-----	15
.4	5.9	7.1	.5	< .1	< .1	3.5	11.1	14.2	129
.3	1.9	.1	.2	< .1	< .1	2.3	2.6	.5	16
.9	6.6	.3	.4	< .1	.1	6.7	7.5	.8	12
1.0	7.9	< .1	.9	< .1	.1	8.4	9.4	-----	13
1.0	7.2	< .1	.6	< .1	.1	7.7	8.4	-----	10
1.2	10.0	< .1	.7	< .1	.1	11.0	11.8	-----	8
2.5	11.1	< .1	.1	< .1	.1	12.4	13.6	-----	11

B'2x—36 to 46 inches, mottled yellowish-brown (10YR 5/6), light brownish-gray (10YR 6/2), and yellowish-red (5YR 4/8) fine sandy loam; mottles are many, fine and medium, distinct and prominent; moderate, medium, platy structure breaking into moderate, medium and coarse, subangular and angular blocky structure; friable; few fine roots; few to common fine voids; vertical cracks, 1 to 2 inches wide filled with yellow (2.5Y 7/4) loamy sand; patchy clay films; gradual, smooth boundary.

C1—46 to 54 inches, mottled yellowish-red (5Y 4/8), light brownish-gray (10YR 6/2), and yellowish-brown (10YR 5/6) fine sandy loam to sandy clay loam; mottles are many, fine and medium, distinct and prominent; moderate, coarse, subangular and angular blocky structure; friable and firm; few fine roots; few fine voids; clay films on ped faces and in cracks; clear, smooth boundary.

C2—54 to 70 inches, gray (10YR 6/1) heavy sandy clay loam with common to many, fine and medium, distinct and prominent, yellowish-red (5YR 4/8), yellowish-brown (10YR 5/6), and red (10R 4/6) mottles; moderate, medium and coarse, angular blocky structure; friable and firm; slightly plastic; clay films on ped faces and in cracks.

Slope: Nearly level (1 percent).
Drainage class: Moderately well drained.
Permeability: Moderate in upper part and slow in lower.
Parent material: Coastal Plain terrace.

Prentiss fine sandy loam.—Profile in bahiagrass pasture, ½ mile south of Stonewall; 400 feet west and 300 feet south of northeast corner of SW¼SE¼ sec. 5, T. 3 N., R. 15 E.

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine and medium, granular structure; very friable; few fine roots; root channels and wormholes filled with material from horizon A2; few, fine, soft, black concretions; clear, smooth boundary.

A2—6 to 11 inches, very pale brown (10YR 7/3) silt loam; weak, fine and medium, granular and subangular blocky structure; friable; few fine roots; some mixing of material from Ap horizon in root channels and wormholes; few, fine, soft, brown and black concretions; clear, smooth boundary.

B2—11 to 22 inches, yellowish-brown (10YR 5/6) heavy loam; moderate, medium, subangular blocky structure; friable; few fine roots; some material from A horizon in root channels and wormholes in upper part of horizon; few, fine, black and brown concretions; clear, smooth boundary.

A'2x 22 to 28 inches, yellowish-brown (10YR 5/6) loam; common, fine, faint, pale-brown (10YR 6/3) mottles; moderate, fine and medium, subangular blocky structure; friable; few fine roots; few, fine, soft, brown concretions; common fine voids; clear, smooth boundary.

B'21x—28 to 35 inches, mottled yellowish-brown (10YR 5/6) and light brownish-gray (10YR 6/2) light loam; mottles are many, fine and medium, distinct; moderate, medium and coarse, subangular and angular blocky structure; friable; few fine roots; common, fine, soft, brown concretions; common fine voids; patchy clay films on ped faces and in cracks; few, fine, vertical cracks filled with light-gray (10YR 6/1) clay loam; gradual, smooth boundary.

B'22x—35 to 44 inches, mottled yellowish-brown (10YR 5/6), light brownish-gray (10YR 6/2), and yellowish-red (5YR 4/8) loam to sandy clay; mottles are many, fine and medium, distinct and prominent; moderate, fine and medium, subangular and angular blocky structure; friable and firm when moist, slightly plastic when wet; few fine roots; few fine voids; few vertical cracks less than 1 inch wide filled with light-gray (10YR 6/1) heavy clay loam; gradual, smooth boundary.

C1—44 to 56 inches, mottled yellowish-brown (10YR 5/6), gray (10YR 5/1), and yellowish-red (5YR 4/8) sandy clay loam; mottles are many, fine, distinct and prominent; moderate, medium and coarse, subangular and angular blocky structure; firm when moist, slightly plastic when wet; clay films in cracks and on ped faces; few vertical streaks of light-gray (10YR 6/1) clay loam; gradual, smooth boundary.

C2—56 to 68 inches, mottled yellowish-red (5YR 4/8), light-gray to gray (10YR 6/1), and yellowish-brown (10YR 5/6) sandy clay loam; mottles are many, fine and medium, distinct and prominent; moderate, medium and coarse, subangular and angular blocky structure; firm when moist, slightly plastic when wet; few vertical cracks of light-gray to gray (10YR 6/1) clay loam; clay films on ped faces and in cracks.

Slope: Nearly level (1 percent).
Drainage class: Moderately well drained.
Permeability: Moderate in upper part and slow in lower.
Parent material: Coastal Plain terrace.

Stough loam.—Profile in dallisgrass pasture, ½ mile west of Enterprise; 300 feet west and 500 feet south of northwest corner of SW¼SW¼ sec. 23, T. 4 N., R. 14 E.

A1 0 to 4 inches, very dark gray (10YR 3/1) fine sandy loam to loam; weak, fine and medium, granular and subangular blocky structure; friable; common fine roots; few, fine and medium, brown and black concretions; lower part of horizon has a few root channels and wormholes filled with material from AB horizon; clear, smooth boundary.

AB—4 to 9 inches, mottled yellowish-brown (10YR 5/4) and dark grayish-brown (10YR 4/2) loam; mottles are many, fine, distinct and appear to be mixed by worms; weak, fine and medium, granular and subangular blocky structure; friable; common fine roots; few, fine and medium, brown and black concretions; clear, smooth boundary.

B21—9 to 17 inches, brownish-yellow (10YR 6/6) loam to fine sandy loam; weak, fine and medium, subangular blocky structure; friable; few fine roots; common, fine and medium, brown and black concretions; clear, smooth boundary.

B22—17 to 24 inches, mottled yellow (2.5Y 7/6), yellowish-brown (10YR 5/6), and light-gray (10YR 7/1) loam; mottles are many, fine and medium, distinct; moderate, fine and medium, subangular blocky structure; friable; few fine roots; common, fine, medium and a few, coarse, black and brown concretions; few fine voids; clear, smooth boundary.

A'2x—24 to 34 inches, mottled light yellowish-brown (2.5Y 6/4), light-gray (2.5Y 7/2), and yellow (10YR 7/6) fine sandy loam; mottles are many, fine, faint and distinct; weak, medium and coarse, subangular and angular blocky structure; friable; vertical cracks, less than 1 inch wide, filled with pale-yellow (5Y 7/3) loamy sand; common, fine and medium, brown and black concretions; common fine voids; gradual, smooth boundary.

B'2x—34 to 50 inches, mottled light-gray (2.5Y 7/2), yellowish-brown (10YR 5/6), and yellow (10YR 7/6) fine sandy loam; mottles are many, fine, faint and distinct; weak, coarse and medium, subangular and angular blocky structure; friable; few, fine, brown and black concretions; common fine voids; few vertical cracks, less than 1 inch wide, filled with yellow (5Y 7/3) loamy sand; gradual, smooth boundary.

C1—50 to 65 inches, mottled strong-brown (7.5YR 5/8), light-gray to gray (10YR 6/1), and brownish-yellow (10YR 6/6) heavy fine sandy loam; mottles are many, fine and medium, distinct; structureless; friable; few vertical cracks filled with light-gray to gray (N 6/0) sandy clay loam or yellow (5Y 7/3) loamy sand.

Slope: Nearly level (½ percent).
Drainage class: Somewhat poorly drained.
Permeability: Moderate in upper part and slow in lower.
Parent material: Coastal Plain terrace.

Stough fine sandy loam.—Profile in carpetgrass pasture, 1 mile west and ½ mile northwest of Shubuta; 300 feet east and 300 feet south of northwest corner of SW¼SW¼ sec. 5, T. 10 N., R. 7 W.

A1—0 to 4 inches, very dark gray (10YR 3/1) fine sandy loam to loamy fine sand; weak, fine and medium, granular structure; very friable; common fine roots; few, fine, soft, black and brown concretions; root channels and wormholes in lower 1 inch of horizon have some mixing of material from A2 horizon; abrupt, smooth boundary.

A2—4 to 11 inches, pale-olive (5Y 6/3) fine sandy loam; weak, fine and medium, granular structure; very friable; few fine roots; some mixing of material from A1 horizon in root channels and wormholes; few, fine, brown and black concretions; clear, smooth boundary.

B21—11 to 18 inches, light yellowish-brown (2.5Y 6/4) heavy fine sandy loam with many, fine, distinct and faint, yellowish-brown (10YR 5/6) and pale-olive (5 Y 6/3) mottles; weak, fine and medium, subangular blocky structure; friable; few fine roots; few, fine and medium, brown and black concretions; clear, smooth boundary.

B22x—18 to 31 inches, mottled light-gray (2.5Y 7/2), yellowish-brown (10YR 5/6), and light yellowish-brown (2.5Y 6/4) light sandy clay loam; mottles are many, fine, distinct; weak, medium and coarse, subangular and angular blocky structure; friable; common, fine and medium, brown and black concretions; few fine voids; few vertical cracks, ½ to 1 inch wide, filled with light-gray (2.5Y 7/2) sandy loam; gradual, smooth boundary.

B23x—31 to 41 inches, mottled light-gray to gray (10YR 6/1), yellowish-brown (10YR 5/6), and light yellowish-brown (2.5Y 6/4) fine sandy loam to sandy clay loam; mottles are many, fine and medium, faint and distinct; weak, medium and coarse, subangular and angular blocky structure; friable; common, fine to coarse, brown and black concretions; few fine voids; common vertical seams, 1 inch wide, filled with light-gray (2.5Y 7/2) sandy loam; gradual, smooth boundary.

B3x—41 to 58 inches, mottled yellowish-brown (10YR 5/6), light-gray and gray (10YR 6/1), and strong-brown (7.5YR 5/6) sandy clay loam; mottles are many, fine and medium, faint and distinct; weak, coarse, angular blocky structure; friable; common, fine to coarse, brown, red, and black concretions; few fine voids; patchy clay films in cracks; common vertical seams filled with light-gray (2.5Y 7/2) sandy loam; diffuse, wavy boundary.

C—58 to 65 inches, mottled yellowish-brown (10YR 5/6), light-gray and gray (10YR 6/1), and red (10R 4/8) sandy clay loam; mottles are many, fine and medium, distinct and prominent; massive; friable and firm; few, fine, red concretions; patchy clay films in cracks; common vertical cracks filled with light-gray (2.5Y 7/2) sandy loam.

Slope: Nearly level (1 percent).
Drainage class: Somewhat poorly drained.
Permeability: Moderate in upper part and slow in lower.
Parent material: Coastal Plain terrace.

General Nature of the County

This section was written primarily for those not familar with Clarke County. It discusses history and population of the county, agriculture, climate, natural resources, and other subjects of general interest.

History and Population

Clarke County was one of the first counties established by the State legislature after September 28, 1830, when the treaty of Dancing Rabbit Creek (*14*) provided for the purchase of the territory by the United States from the Choctaw Indians. The county was established on December 23, 1833, and was named in honor of Judge Josha G. Clarke, the first Chancellor of the State.

Most of the early settlers came from Virginia, Georgia, North Carolina, and South Carolina. At first the farms were small, but later as slaves were brought in, large plantations were established, mainly near the present site of Enterprise. Lumber companies acquired large holdings of timber and prospered; in their early years they cut large tracts of trees and sawed 25 million board feet of lumber annually.

In 1960, the population of Clarke County was 16,493. Quitman, the county seat had 2,030 people; Enterprise, 532; Pachuta, 271; Stonewall, 1,126; and Shubuta, 718.

Agriculture

In Clarke County the acreage in farms and the number of farms has been decreasing for many years, and acreage of the average-sized farm has increased. In 1954 the 2,255 farms in the county totaled 262,251 acres, and in 1959 the 1,568 farms totaled 221,699 acres. During the period from 1954 to 1959, the land in cultivated crops decreased from 31,765 to 24,753 acres, the land in cotton decreased from 5,987 to 2,600 acres, and the land in corn decreased from 17,225 to 15,821 acres.

The 1959 Census of Agriculture classifies the farms in the county as follows: Less than 10 acres, 110 farms; 10 to 48 acres, 585 farms; 50 to 69 acres, 147 farms; 70 to 99 acres, 204 farms; 100 to 139 acres, 156 farms; 140 to 179 acres, 107 farms; 180 to 219 acres, 63 farms; 220 to 259 acres, 38 farms; 260 to 499 acres, 104 farms; 500 to 999 acres, 37 farms; and 1,000 acres or more, 17 farms.

More than 20,000 cattle were supported on 39,211 acres of pasture in 1959, and in that year livestock sales amounted to more than $1,000,000 and milk sales amounted to about $300,000.

Also in 1959, there were eight commercial peach orchards in the county (fig. 12). In these orchards more than 28,000 trees were of bearing age and produced about 30,000 bushels of peaches.

In 1959 commercial fertilizer or other amendments were used on 25,000 acres, and 2,333 tons of lime were used on 2,585 acres. Cornpickers totaled 19; pickup hay balers, 56; and tractors, 540. Of the farms in the county, 415 had telephones and 779 had home freezers.

Climate

The climate of Clarke County is influenced mainly by its subtropical location, the huge land mass to the north, and the warm waters of the Gulf of Mexico. The temperature and precipitation for the county are given by months in table 11.

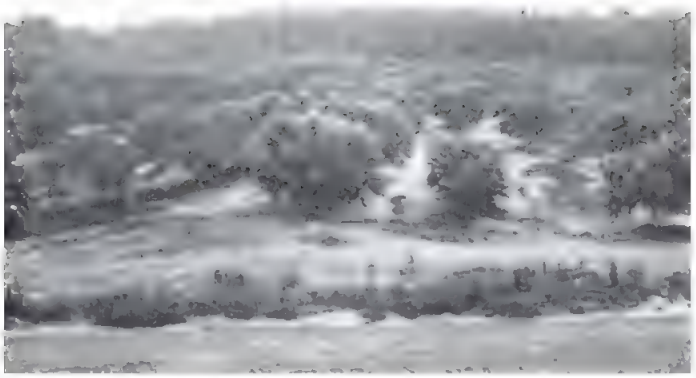

Figure 12.—**A commercial peach orchard.**

In summer the prevailing southerly winds bring in moist tropical air, but occasionally westerly and northerly winds bring in hot, dry air from the continental mass. If these hot winds last a long time, the county may have a drought, as it did in 1924, 1925, 1954, and 1960. In winter moist tropical air alternates with dry polar air, and the temperature changes suddenly. The dry polar air may bring freezing temperature, but usually it does not last long. During January snow can be expected only about once in 10 years, and it stays on the ground for only a short time.

Relative humidity is high the year round and averages from 60 to 100 percent for 71 percent of the time. Even when the temperature is below 50° F., the relative humidity averages from 50 to 79 percent for 53 percent of the time. At temperatures above 90°, the relative humidity does not exceed 80 percent.

Precipitation is generally ample throughout the year. Fall is the driest season, and October the driest month. Rains are often prolonged in winter and spring because in those seasons the warm air from the gulf rises above the cold air at the surface. Thundershowers account for most of the precipitation during summer and early in fall, but these showers generally are widely scattered and local areas may be droughty because the showers bypass them. In any month, however, some local areas may have flash floods when 3 inches of rain or more fall in 24 hours.

Table 12 gives the probability of the last freezing temperature in spring and the first in fall. Temperatures of 20° or lower occur 4 years out of every 5, and at these low temperatures the ground is occasionally frozen for a short

TABLE 11.--TEMPERATURE AND PRECIPITATION, CLARKE COUNTY

[Precipitation data from records at Shubuta, Miss.; temperature data has been adjusted from records at Waynesboro, Miss.]

Month	Temperature				Precipitation				
	Average daily maximum	Average daily minimum	Two years in 10 will have at least 4 days with--		Average total	One year in 10 will have--		Days with snow cover	Average depth of snow on days with snow cover
			Maximum temperature equal to or higher than--	Minimum temperature equal to or lower than--		Less than--	More than--		
	°F.	°F.	°F.	°F.	Inches	Inches	Inches	Number	Inches
January---	62	38	78	22	4.92	2.40	9.55	(1/)	2.2
February--	65	41	79	24	5.36	3.07	8.29	0	---
March-----	71	45	83	29	6.93	3.41	10.89	0	---
April-----	78	52	88	38	5.44	2.75	7.47	0	---
May-------	85	61	94	48	4.49	1.30	8.27		---
June------	91	68	98	61	4.25	1.88	7.81	0	---
July------	91	71	98	65	7.77	2.94	13.04	0	---
August----	92	70	99	62	3.47	1.67	5.89	0	---
September-	88	65	96	52	4.14	1.02	6.75	0	---
October---	80	53	90	35	2.21	.24	5.58	0	---
November--	69	42	81	27	3.86	.71	7.74	0	---
December--	62	39	77	23	5.59	2.75	8.70	0	---
Year--	78	54	2/ 100	3/ 16	58.43	46.12	69.37	(1/)	2.2

1/ Less than 0.5 day.

2/ Average annual highest temperature.

3/ Average annual lowest temperature.

TABLE 12.--CHANCE OF LAST DAMAGING TEMPERATURE IN SPRING AND FIRST IN FALL

[Data based on records at Waynesboro, Miss., from 1921 through 1950, adjusted to fit conditions in Clark County]

Chance	Temperature in spring of--					Temperature in fall of--				
	24°F. after--	28°F. after--	32°F. after--	36°F.[1] after--	40°F.[1] after--	24°F. before--	28°F. before--	32°F. before--	36°F.[1] before--	40°F.[1] before--
1 in 10-----	Mar. 7	Mar. 24	Apr. 10	Apr. 22	May 3	Nov. 19	Nov. 4	Oct. 23	Oct. 15	Oct. 7
2 in 10-----	Feb. 28	Mar. 17	Apr. 4	Apr. 17	Apr. 28	Nov. 24	Nov. 9	Oct. 28	Oct. 20	Oct. 12
5 in 10-----	Feb. 14	Mar. 4	Mar. 24	Apr. 8	Apr. 17	Dec. 5	Nov. 24	Nov. 8	Oct. 30	Oct. 20

[1] Chances of temperatures of 36° and 40° are given because frost can form on vegetation, under clear sky and in calm air at night, when temperature registered on a thermometer 5 feet above ground in a shelter is above 32°.

time. On an average, temperatures of 32° or lower occur 45 days a year and temperatures of 90° or higher occur 85 days a year. From May through October, temperatures of 90° or higher occur about 31 percent of the time. From November through April, temperatures of 70° or higher occur about 13 percent of the time and temperatures below 50° occur about 37 percent of the time.

Only once in every 13 years, on the average, are there tornadoes and hailstorms. Gales of hurricane force (39 to 74 miles per hour) come once in 21 years, but prolonged rains from hurricanes are much more frequent.

Natural Resources

The supply of water for the household and for livestock generally is adequate. Most of the water used in the household is from wells and springs, and most of that used by livestock is from perennial streams, springs, and ponds. In winter the flow in many of the intermittent streams is large enough to water livestock. Also, 100 artesian wells throughout the county furnish water.

The oil wells in the five oilfields of the county produce more than 434,000 barrels of oil annually.

Clarke County is a large producer of pulpwood. In 1960 the pulpwood and other timber products were valued at $6,136,778. The average monthly production was 350 carloads.

Schools, Churches, and Other Facilities

Five senior high schools and six elementary schools are conveniently located in Clarke County. Buses transport children to and from school. Throughout the county are churches of various denominations, the larger ones in the towns. Watkins Memorial Hospital in Quitman has 60 beds and a fully equipped laboratory. A clinic serviced by two doctors has been recently completed at Enterprise.

All communities have rural mail delivery, telephone service, and electric power. Some of the larger towns are supplied with natural gas, and butane and propane gas is sold throughout the county and delivered by truck.

Transportation and Industry

Two railroads pass through the county. The New Orleans and Northeastern Railroad, a part of the Southern Railroad System, connects Enterprise and Pachuta with New Orleans to the south and with Washington, D.C., to the north. The Gulf, Mobile and Ohio Railroad connects Enterprise, Stonewall, Quitman, and Shubuta with Mobile, Ala., to the south and with Chicago to the north.

U.S. Highway No. 11 parallels the New Orleans and Northeastern Railroad and serves the same towns that the railroad does. U.S. Highway No. 45 extends from north to south through the county and serves Quitman, De Soto, and Shubuta. Several State highways cross the county from east to west. Many of the county roads are paved. Running in the county are Greyhound, Dixie Trailway, and Continental Trailway buslines and many truck lines.

Among the larger industrial plants in Clarke County are a knitting mill, a paper plant, a gas-pumping station, and a charcoal plant. The industrial plants in the county employ about 1,250 people.

Recreation

In Clarke County fishing, hunting, and boating are available, and several communities have supervised recreation. The Chickasawhay River and Bucatunna Creek have facilities for fishing, and many small streams, private lakes, and farm ponds are open to fishermen. Boating, fishing, swimming, and water skiing are enjoyed on a 54-acre lake in Clarkco State Park, 5 miles north of Quitman.

A managed hunting area has been recently acquired by Clarke County in the uplands. It is called the Bucatunna Managed Area and consists of 56,000 acres of good game territory. Near the center of this area about 10,000 acres are used for breeding deer, turkey, and other game. The area is under the full-time supervision of a manager from the State Game and Fish Commission.

Glossary

Acidity and Alkalinity. See Reaction.

Aggregate, soil. A cluster of many soil particles held together by internal forces to form a granule, crumb, clod, block, or other mass.

Alluvium. Soil material, such as sand, silt, or clay that has been deposited on land by streams.

Available water capacity. That part of the total moisture in the soil that can be readily taken in by plants.

Calcareous soil. A soil that is alkaline in reaction or that contains calcium carbonate. It effervesces (fizzes) visibly when treated with cold, dilute hydrochloric acid.

Clay. Small mineral grains of soil less than 0.002 millimeter in diameter. The term "clay" also applies to soil that contains 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay loam. Soil material that contains 27 to 40 percent clay and 20 to 45 percent sand.

Complex, soil. A mapping unit that consists of two or more recognized soils, or taxonomic units. These soils may be similar or contrasting, but they occur together in a more or less regular pattern and are so intimately associated geographically that they cannot be separated by boundaries on a map of the scale used.

Concretions. Hard grains, pellets, or nodules that consists of concentrations of compounds in the soil. Some concretions are made of material that is unlike the surrounding soil and frequently consist of calcium carbonate or iron oxide.

Consistence. A property of the soil that is indicated by the feel of the soil and the ease with which a lump can be crushed by the fingers. The terms used to describe consistence are as follows:

Brittle.—Soil breaks with a sharp, clean fracture; if struck with a sharp blow, it shatters in cleanly broken, hard fragments.

Compact.—Dense and firm but without cementation.

Firm.—When moist, soil material crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Friable.—When moist, soil material crushes easily between thumb and forefinger and can be pressed together into a lump.

Hard.—When dry, soil material is moderately resistant to pressure, can be broken in hands without difficulty, but is barely breakable between thumb and forefinger.

Loose.—When dry or moist, soil material is noncoherent or will not hold together in a mass.

Plastic.—When wet, soil material can be deformed under moderate pressure and becomes wirelike when rolled between thumb and forefinger.

Sticky.—When wet, soil material adheres to both thumb and forefinger and tends to stretch under pressure.

Very friable.—When moist, soil material crushes easily under gentle pressure between thumb and forefinger but coheres when pressed together.

Contour tillage. Furrows plowed at right angles to the direction of slope, at the same level throughout, and ordinarily at comparatively close intervals.

Fertility, soil. The quality of a soil that enables it to provide compounds, in adequate amounts and in proper balance, for the growth of specified plants when other factors, such as light, moisture, temperature, and the physical condition of a soil are favorable.

First bottom. The normal flood plain of a stream, part of which may be flooded only at infrequent intervals.

Forest. Land on which there is a stand of trees of any age or stature, including seedlings (reproductions), but of kinds that have a minimum average height of 6 feet at maturity; or land from which such a stand has been removed and on which no other use has been substituted.

Fragipan. A dense brittle subsurface horizon very low in organic matter and clay but rich in silt or very fine sand. The layer seems to be cemented when it is dry. It is hard or very hard and has a high bulk density in comparison with the horizon or horizons above it. When moist, the fragipan tends to rupture suddenly if pressure is applied, rather than to deform slowly. The layer is generally mottled and is slowly or very slowly permeable to water. Fragipans are a few inches to several feet thick, and they generally occur below the B horizon, 15 to 40 inches below the surface.

Gleyed soil. A soil in which waterlogging and lack of oxygen have caused the material to be neutral gray in color.

Horizon, soil. A layer of soil, approximately parallel to the soil surface, with characteristics produced by soil-forming processes.

Horizon A.—A master horizon that has one or more mineral horizons consisting of (1) horizons of organic-matter accumulation formed or forming at or adjacent to the surface; (2) horizons that have lost clay, iron, or aluminum with resultant concentration of quartz or other more resistant minerals; or (3) horizons that belong to both of these categories.

Horizon B.—A master horizon that has one or more layers of altered material characterized by (1) an accumulation of clay, iron, or aluminum, or accessory organic matter, alone or in combination; (2) alteration that obliterates original rock structure, forms silicate clays or liberates oxides, or both, and that forms granular, blocky, or prismatic structure if textures are such that volume changes accompany changes in moisture; (3) residual concentrations of materials that have formed by other means than solution; or (4) redder, darker colored coatings not genetically related to other layers in the B horizon and apparently not from illuviated iron.

Horizon C.—A master horizon consisting of one or more layers of material, excluding bedrock, that is only slightly affected by soil-forming processes, that lacks the properties of the A and B horizons, but that includes modified materials. These materials weathered out of the zone of major biological activity, and they are reversibly cemented, are brittle, and have other characteristics of fragipans. Carbonates accumulate in the C horizon, which may be gleyed. A Roman numeral II preceding the symbol C indicates lithologic discontinuity, or that the horizon is of material different from that from which the horizons above formed. The C horizon now includes the contrasting layers of unconsolidated material formerly designated as D.

Horizon R.—Underlying consolidated bedrock, such as granite, sandstone, or limestone.

Following are the symbols used in this report with the letters designating the master horizons, and the meaning of these symbols:

g—Strong gleying.
p—Plow layer.
t—Illuvial clay.
x—Fragipan.
'(prime accent)—Designates the lower part in a vertical sequence that has more than one sequum. A sequum is an illuvial or B horizon, together with its overlying eluvial or A horizon if one is present.

Horizon boundaries. The widths of boundaries between soil horizons are described as *abrupt*, if less than 1 inch wide; *clear*, if about 1 to 2½ inches wide; gradual, if 2½ to 5 inches wide; and *diffuse*, if more than 5 inches wide. Also expressed is how the boundary departs from a horizontal plane. The boundary is *smooth*, if nearly a plane; *wavy*, if pockets are wider than their depth; and *irregular*, if pockets are deeper than their width. Example: clear, smooth boundary.

Internal drainage. The downward movement of water through the soil; the rate of movement is affected by the structure of the soil, texture of the surface layer and subsoil, the height of the water table, and other characteristics of the soil.

Leaching, soil. Removal of materials in solution by the passage of water through soil.

Loam. The textural class name for soil having approximately equal amounts of sand, silt, and clay. Loams contain 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand.

Loamy sand. The textural class name for soil that consists mostly of sand. Loamy sands contain 70 to 90 percent sand, 9 to 20 percent clay, and 6 to 10 percent silt. The combined content of clay and silt ranges from 15 to 30 percent.

Mottles. Contrasting color patches that vary in number and size. Descriptive terms are as follows: Abundance—*few*, *common*, and *many*; contrast—*faint*, *distinct*, and *prominent*; and size—*fine*, *medium*, and *coarse*. The size measurements are these: *fine*, less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium*, ranging from 5 to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse*, more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

Natural drainage. Moisture conditions that existed during the development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven different classes of natural drainage are recognized.

Excessively drained soils are commonly very porous and rapidly permeable and have a low water-holding capacity.

Somewhat excessively drained soils are also very permeable and are free from mottling throughout their profile.

Well-drained soils are nearly free from mottling and are commonly of intermediate texture.

Moderately well drained soils commonly have a slowly permeable layer in or immediately beneath the solum. They have uniform color in the A and upper B horizons and have mottling in the lower B and C horizons.

Somewhat poorly drained soils are wet for significant periods but not all the time, and in Podzolic soils, mottles are common below 6 to 16 inches in the lower A horizon and in the B and C horizons.

Poorly drained soils are wet for long periods and are light gray and generally mottled from the surface downward, although mottling may be absent or nearly so in some soils.

Very poorly drained soils are wet nearly all the time. They have a dark-gray or black surface layer and are gray or light gray, with or without mottling, in the deeper parts of the profile.

Nutrient, plant. Any element taken in by a plant that is essential to its growth and is used by the plant in producing food and tissue.

Parent material. The unconsolidated mass of rock material or partly weathered soil material from which the soil has formed; horizon C in the soil profile.

Permeability, soil. The quality of the soil that enables air and water to move through it. Terms used to describe permeability are as follows: Very slow, slow, moderately slow, moderate, moderately rapid, rapid, and very rapid.

Phase, soil. A subdivision of the soil type that is made generally because of differences in relief, stoniness, accelerated erosion, or other external characteristics and that affects its management but not its classification in the natural landscape.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material. See Horizon.

Reaction. The degree of acidity or alkalinity of the soil mass expressed in pH values and in words as follows (*16*):

	pH
Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of the land surface, considered collectively.

Sand. Rock or mineral fragments having diameters ranging from 0.05 millimeter (0.002 inch) to 2.0 millimeters (0.079 inch): The term "sand" is also applied to soils containing 85 percent or more of sand.

Sandy clay. Soil that contains 35 percent or more clay and 45 percent or more of sand.

Sandy clay loam. Soil that contains 20 to 35 percent clay, less than 28 percent silt, and 45 percent or more of sand.

Sandy loam. Soil that contains 30 percent or more very coarse, coarse, and medium sand, but less than 25 percent very coarse sand, and less than 30 percent very fine or fine sand.

Series, soil. A group of soils, formed from a particular type of parent material, that have soil horizons similar in their differentiated characteristics and in arrangement of the soil profile, except for the texture of the surface layer.

Silt. Small mineral particles of soil ranging from 0.002 millimeter (0.000079 inch) to 0.05 millimeter (0.002 inch) in diameter. The term "silt" is also applied to soils containing 80 percent or more of silt and less than 12 percent of clay.

Silt loam. Soil having 50 percent or more of silt and 12 to 27 percent of clay or 50 to 80 percent of silt and less than 12 percent of clay.

Silty clay. Soil having 40 percent or more of clay and 40 percent or more of silt.

Silty clay loam. Soil having 27 to 40 percent of clay and less than 20 percent of sand.

Site index. The average height of the dominant and codominant trees of a given species at the age of 50 years on a given soil.

Structure, soil. The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. The principal forms of structure are *platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular and subangular), and *granular*. *Structureless* soils are (1) *single grain* (each grain by itself, as in dune sand) or (2) *massive* (the particles adhere together without any regular cleavage, as in many claypans and hardpans).

Subsoil. In many soils, the B horizon; roughly the part of the profile below plow depth.

Surface soil. That part of the upper profile normally stirred by plowing; the plowed layer or its equivalent.

Terrace (geologic). Old alluvial plain, often called a second bottom, that now lies above the present flood plain or first bottom and is seldom subject to overflow.

Texture, soil. Relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportions of fine particles are as follows: Sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay. These classes may be further divided as *coarse, moderately coarse, medium, moderately fine,* and *fine.*

Tilth, soil. The physical condition of a soil in respect to its fitness for the growth of a specified plant or sequence of plants. Tilth refers to consistence, porosity, and structure.

Type, soil. A subdivision of the soil series that is made on the basis of differences in the texture of the surface layer.

Undifferentiated soils. Two or more related soils that are mapped as a single unit because, for survey or management purposes, their differences are too small to justify separate mapping.

Upland (geology). Land consisting of materials unworked by water in recent geologic time and lying, in general, at elevations higher than the alluvial plain or stream terrace.

Water-holding capacity. The capacity of soil to hold water.

Water table. The upper limit of the part of the soil or underlying rock material that is wholly saturated with water.

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GUIDE TO MAPPING UNITS

[See table 1, p. 5, for approximate acreage and proportionate extent of soils and table 2, p. 43, for estimated yields. See p. 61 to p. 89 for information on engineering applications of soils]

Map symbol	Mapping unit	Page	Capability unit		Woodland group	
			Symbol	Page	Number	Page
AnA	Angie fine sandy loam, 0 to 2 percent slopes	7	IIs-2	33	2	56
AnB	Angie fine sandy loam, 2 to 5 percent slopes	7	IIIe-4	34	2	56
AnC2	Angie fine sandy loam, 5 to 8 percent slopes, eroded	4	IVe-4	37	2	56
Bb	Bibb soils	7	IVw-1	38	4	56
Bc	Bibb and Chastain fine sandy loams	7	IVw-1	38	4	56
BfB	Boswell fine sandy loam, 2 to 5 percent slopes	8	IIIe-4	34	2	56
BfB2	Boswell fine sandy loam, 2 to 5 percent slopes, eroded	8	IIIe-4	34	2	56
BfC	Boswell fine sandy loam, 5 to 8 percent slopes	8	IVe-4	37	2	56
BfC2	Boswell fine sandy loam, 5 to 8 percent slopes, eroded	8	IVe-4	37	2	56
BfD	Boswell fine sandy loam, 8 to 12 percent slopes	8	VIe-3	40	2	56
BfD2	Boswell fine sandy loam, 8 to 12 percent slopes, eroded	8	VIe-3	40	2	56
BoC3	Boswell sandy clay loam, 5 to 8 percent slopes, severely eroded	8	VIe-3	40	2	56
BoD3	Boswell sandy clay loam, 8 to 12 percent slopes, severely eroded	8	VIe-3	40	2	56
BtD	Boswell, Shubuta, and Cuthbert fine sandy loams, 5 to 12 percent slopes	9	VIe-4	40	2	56
BtF	Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes	9	VIIe-2	41	2	56
Bu	Bruno loamy fine sand	9	IIIw-2	35	11	58
CaA	Cahaba fine sandy loam, 0 to 2 percent slopes	10	I-1	30	1	55
CaB	Cahaba fine sandy loam, 2 to 5 percent slopes	10	IIe-1	30	1	55
CaB2	Cahaba fine sandy loam, 2 to 5 percent slopes, eroded	10	IIe-1	30	1	55
CaD2	Cahaba fine sandy loam, 5 to 12 percent slopes, eroded	10	IVe-1	36	1	55
EsB	Eustis loamy sand, 2 to 5 percent slopes	11	IIIs-1	36	7	57
EsC	Eustis loamy sand, 5 to 8 percent slopes	11	IVs-1	39	7	57
EsD	Eustis loamy sand, 8 to 12 percent slopes	11	VIs-1	40	7	57
EsF	Eustis loamy sand, 12 to 35 percent slopes	11	VIIs-1	41	7	57
Et	Eustis loamy sand, terrace	11	IIIs-1	36	7	57
Eu	Eutaw clay, deep	11	IVw-3	38	12	58
Ev	Eutaw-Vaiden clays, deep	12	IVw-3	38	12	58
FfA	Flint fine sandy loam, loamy substratum, 0 to 2 percent slopes	12	IIs-1	33	2	56
FfB	Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes	12	IIe-2	30	2	56
Ga	Gullied land, acid	12	VIIe-3	41	17	59
Gk	Gullied land, alkaline	12	VIIe-3	41	14	59
Ho	Houlka clay	13	IIIw-3	36	13	58
HuA	Houston clay, 0 to 2 percent slopes	13	IIs-3	33	16	59
HuB	Houston clay, 2 to 5 percent slopes	13	IIe-4	31	16	59
Ik	Iuka fine sandy loam	13	IIw-1	31	6	57
Iu	Iuka soils, local alluvium	13	IIw-1	31	6	57
Jo	Johnston loam	14	IVw-1	38	9	58
LaC	Lauderdale stony fine sandy loam, 5 to 8 percent slopes	14	IVs-2	39	10	58
LaF	Lauderdale stony fine sandy loam, 12 to 45 percent slopes	14	VIIs-2	41	10	58
LbD	Lauderdale-Boswell complex, 5 to 12 percent slopes	15	VIs-2	41	10	58
LbF	Lauderdale-Boswell complex, 17 to 45 percent slopes	14	VIIs-3	42	10	58
LeD	Lauderdale-Eustis complex, 8 to 12 percent slopes	15	VIs-2	41	10	58
LeF	Lauderdale-Eustis complex, 12 to 45 percent slopes	15	VIIs-3	42	10	58
Lf	Leaf fine sandy loam	15	IVw-2	38	5	57
Ma	Mantachie fine sandy loam	16	IIw-3	32	6	57
Mc	Mantachie soils, local alluvium	16	IIw-3	32	6	57
Mn	Mantachie, Bibb, and Iuka soils	16	IVw-1	38	4	56
Ms	Mashulaville loam	17	IVw-2	38	5	57
Mt	Mashulaville fine sandy loam, terrace	17	IVw-2	38	5	57
OfA	Ora fine sandy loam, 0 to 2 percent slopes	18	IIw-2	32	3	56
OfB	Ora fine sandy loam, 2 to 5 percent slopes	18	IIe-3	31	3	56
OfB2	Ora fine sandy loam, 2 to 5 percent slopes, eroded	17	IIe-3	31	3	56
OfC	Ora fine sandy loam, 5 to 8 percent slopes	18	IIIe-3	34	3	56
OfC2	Ora fine sandy loam, 5 to 8 percent slopes, eroded	18	IIIe-3	34	3	56
OfD2	Ora fine sandy loam, 8 to 12 percent slopes, eroded	18	IVe-3	37	3	56
OrC	Orangeburg fine sandy loam, 5 to 8 percent slopes	18	IIIe-1	33	1	55
OrC2	Orangeburg fine sandy loam, 5 to 8 percent slopes, eroded	18	IIIe-1	33	1	55
OrC3	Orangeburg fine sandy loam, 5 to 8 percent slopes, severely eroded	19	IVe-1	36	1	55
OrD	Orangeburg fine sandy loam, 8 to 12 percent slopes	19	IVe-1	36	1	55
OrD3	Orangeburg fine sandy loam, 8 to 12 percent slopes, severely eroded	19	VIe-1	39	1	55
OrE	Orangeburg fine sandy loam, 12 to 17 percent slopes	19	VIe-1	39	1	55
OrF	Orangeburg fine sandy loam, 17 to 35 percent slopes	19	VIIe-1	41	1	55
PhA	Pheba fine sandy loam, 0 to 2 percent slopes	19	IIIw-1	35	8	57
PhB	Pheba fine sandy loam, 2 to 5 percent slopes	19	IIIw-1	35	8	57
PrA	Prentiss fine sandy loam, 0 to 2 percent slopes	20	IIw-2	32	3	56
PrB	Prentiss fine sandy loam, 2 to 5 percent slopes	20	IIe-3	31	3	56
RuA	Ruston fine sandy loam, 0 to 2 percent slopes	20	I-1	30	1	55
RuB	Ruston fine sandy loam, 2 to 5 percent slopes	20	IIe-1	30	1	55
RuB2	Ruston fine sandy loam, 2 to 5 percent slopes, eroded	21	IIe-1	30	1	55
RuC	Ruston fine sandy loam, 5 to 8 percent slopes	21	IIIe-1	33	1	55
RuC2	Ruston fine sandy loam, 5 to 8 percent slopes, eroded	20	IIIe-1	33	1	55
RuC3	Ruston fine sandy loam, 5 to 8 percent slopes, severely eroded	21	IVe-1	36	1	55
RuD	Ruston fine sandy loam, 8 to 12 percent slopes	21	IVe-1	36	1	55
RuD2	Ruston fine sandy loam, 8 to 12 percent slopes, eroded	21	IVe-1	36	1	55
RuD3	Ruston fine sandy loam, 8 to 12 percent slopes, severely eroded	21	VIe-1	39	1	55
RuE	Ruston fine sandy loam, 12 to 17 percent slopes	21	VIe-1	39	1	55
RuE2	Ruston fine sandy loam, 12 to 17 percent slopes, eroded	21	VIe-1	39	1	55
RuE3	Ruston fine sandy loam, 12 to 17 percent slopes, severely eroded	21	VIIe-1	41	1	55
RuF	Ruston fine sandy loam, 17 to 35 percent slopes	21	VIIe-1	41	1	55
RuF2	Ruston fine sandy loam, 17 to 35 percent slopes, eroded	22	VIIe-1	41	1	55
Sa	Sandy alluvial land	22	Vw-1	39	11	58
SfA	Savannah fine sandy loam, 0 to 2 percent slopes	22	IIw-2	32	3	56
SfB	Savannah fine sandy loam, 2 to 5 percent slopes	22	IIe-3	31	3	56
SfB2	Savannah fine sandy loam, 2 to 5 percent slopes, eroded	22	IIe-3	31	3	56
SfC2	Savannah fine sandy loam, 5 to 8 percent slopes, eroded	22	IIIe-3	34	3	56
ShB	Shubuta fine sandy loam, 2 to 5 percent slopes	23	IIe-2	30	2	56
ShB2	Shubuta fine sandy loam, 2 to 5 percent slopes, eroded	23	IIe-2	30	2	56
ShC	Shubuta fine sandy loam, 5 to 8 percent slopes	23	IIIe-2	34	2	56
ShC2	Shubuta fine sandy loam, 5 to 8 percent slopes, eroded	23	IIIe-2	34	2	56
ShD	Shubuta fine sandy loam, 8 to 12 percent slopes	23	IVe-2	37	2	56
ShD2	Shubuta fine sandy loam, 8 to 12 percent slopes, eroded	23	IVe-2	37	2	56
SnC3	Shubuta sandy clay loam, 5 to 8 percent slopes, severely eroded	23	IVe-2	37	2	56
SnD3	Shubuta sandy clay loam, 8 to 12 percent slopes, severely eroded	23	VIe-2	39	2	56
StA	Stough fine sandy loam, 0 to 2 percent slopes	24	IIIw-1	35	8	57
SuB2	Sumter clay, 2 to 5 percent slopes, eroded	24	IIe-4	31	14	59
SuB3	Sumter clay, 2 to 5 percent slopes, severely eroded	24	IIIe-5	35	14	59
SuC2	Sumter clay, 5 to 8 percent slopes, eroded	24	IIIe-5	35	14	59
SuD3	Sumter clay, 5 to 12 percent slopes, severely eroded	24	VIe-5	40	14	59
TfA	Tilden fine sandy loam, 0 to 2 percent slopes	25	IIw-2	32	3	56
TfB	Tilden fine sandy loam, 2 to 5 percent slopes	25	IIe-3	31	3	56
TfB2	Tilden fine sandy loam, 2 to 5 percent slopes, eroded	25	IIe-3	31	3	56
TfC2	Tilden fine sandy loam, 5 to 8 percent slopes, eroded	25	IIIe-3	34	3	56
VaA	Vaiden clay, deep, 0 to 2 percent slopes	25	IIIw-4	36	12	58
VaB	Vaiden clay, deep, 2 to 5 percent slopes	25	IIIe-6	35	12	58
VaB2	Vaiden clay, deep, 2 to 5 percent slopes, eroded	25	IIIe-6	35	12	58
VaC2	Vaiden clay, deep, 5 to 8 percent slopes, eroded	26	IVe-5	38	12	58
VaD2	Vaiden clay, deep, 8 to 12 percent slopes, eroded	26	VIe-6	40	12	58
VoA	Vaiden and Oktibbeha silt loams, deep, 0 to 2 percent slopes	26	IIIw-4	36	12	58
VoB	Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes	26	IIIe-6	35	12	58
VoC	Vaiden and Oktibbeha silt loams, deep, 5 to 8 percent slopes	26	IVe-5	38	12	58
VoD	Vaiden and Oktibbeha silt loams, deep, 8 to 12 percent slopes	26	VIe-6	40	12	58
Wa	Wahee fine sandy loam	26	IIs-2	33	2	56
Wp	West Point clay	27	IIw-4	32	15	59

749-450 O - 65 (Face p. 116)

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U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
MISSISSIPPI AGRICULTURAL
EXPERIMENT STATION

GENERAL SOIL MAP
CLARKE COUNTY, MISSISSIPPI

N

SOIL ASSOCIATIONS

1 — Vaiden-Eutaw-Sumter-Houston association — Moderately well drained to poorly drained clays

2 — Bibb-Mantachie-Iuka association: Poorly drained to moderately well drained sandy soils on flood plains

3 — Savannah-Ora-Pheba-Stough association: Moderately well drained and somewhat poorly drained sandy loams on broad, gently sloping uplands

4 — Ruston-Orangeburg association — Well-drained fine sandy loams on upland ridgetops and steep side slopes

5 — Ruston-Shubuta-Ora-Boswell association — Well drained and moderately well drained sandy loams on narrow ridgetops and steep side slopes

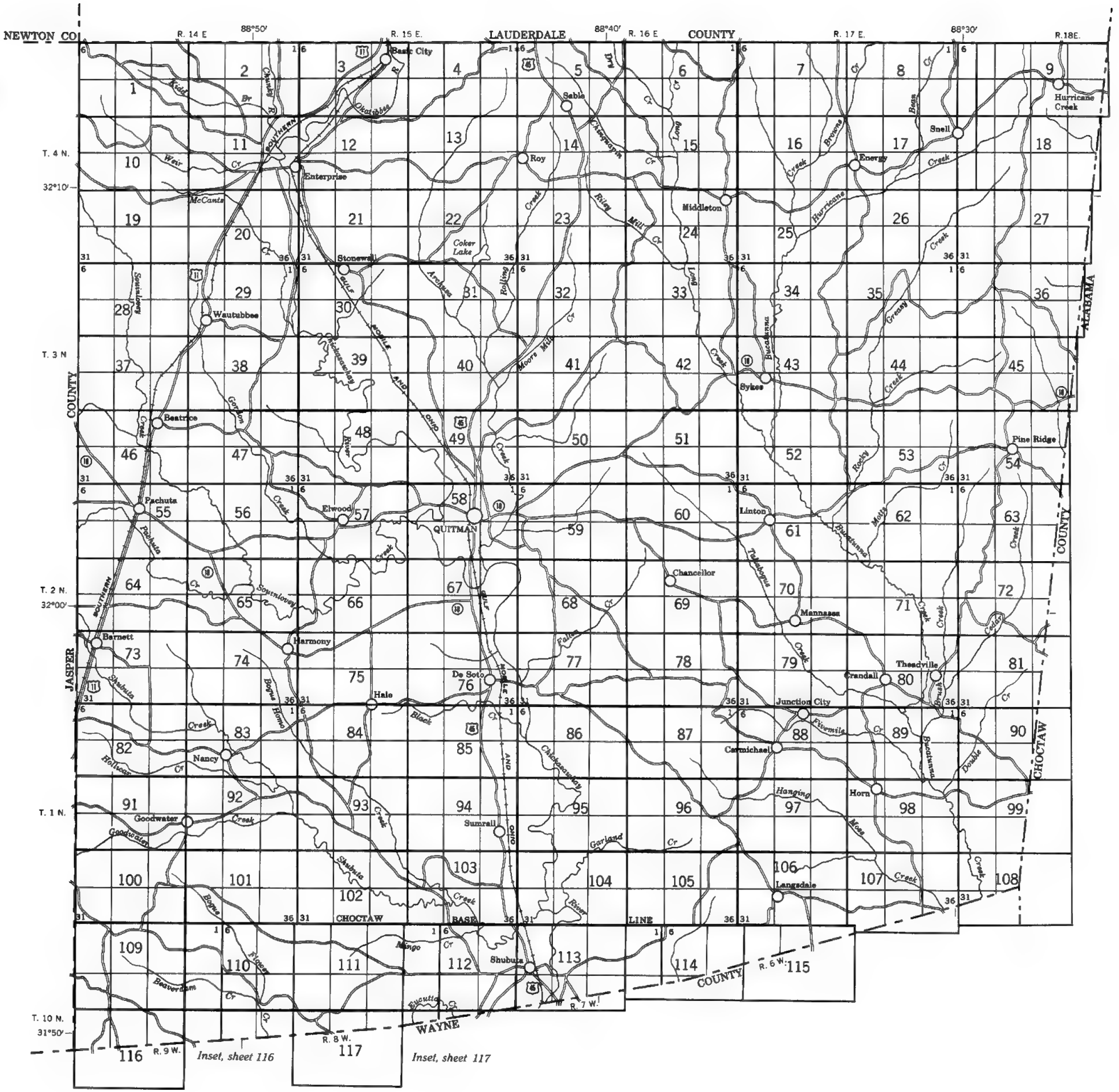
6 — Lauderdale-Boswell association — Moderately well drained to excessively drained soils on narrow ridgetops and steep side slopes

October 1964

Scale 1:190080

1 0 1 2 3 4 Miles

INDEX TO MAP SHEETS
CLARKE COUNTY, MISSISSIPPI



CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 1

(1)

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Range, township, and section corners shown on this map are indefinite.

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 10

10

N

(Joins sheet 1)

R. 14 E.

T. 4 N.

JASPER COUNTY

(Joins sheet 11)

(Joins sheet 19)

New Fellowship Church

INTERSTATE 59 PROPOSED

½ Mile Scale 1:15 840 3000 Feet

100

N

(Joins sheet 91)

R. 14 E.

T. 1 N.

COUNTY

JASPER

(Joins sheet 101)

(Joins sheet 109)

CHOCTAW BASE LINE

Lake Waukena

30 29 28 31 32 33

0 ½ Mile Scale 1:15 840 0 3000 Feet

N

(Joins sheet 93)

R. 15 E.

T. 1 N.

(Joins sheet 101)

(Joins sheet 103)

SHUBUTA CREEK

Bogue Homo

CHOCTAW BASE LINE

(Joins sheet 111) | (112)

0 ½ Mile Scale 1:15 840 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 103

R. 15 E.

N

(Joins sheet 94)

T. 1 N.

(Joins sheet 102)

(Joins sheet 104)

(Joins sheet 112)

CHOCTAW BASE LINE

Hepzibah Church

SHUBUTA CREEK

Bogue Homo

Creek

Ma Creek

Mike Creek

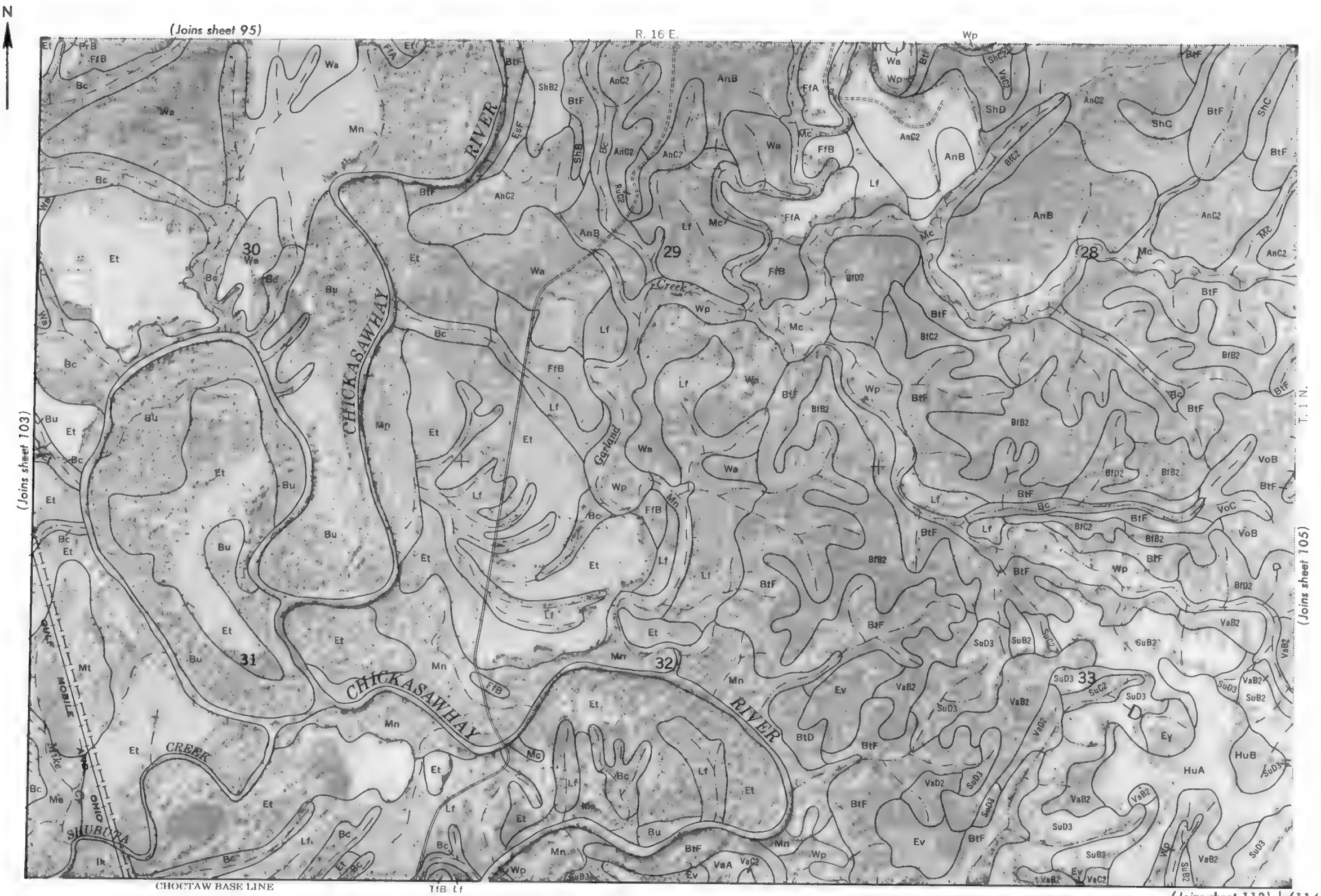
GULF MOBILE AND OHIO

27 26 25 34 35 36

0 ½ Mile

Scale 1:15 840

0 3000 Feet


N
(Joins sheet 95)
R. 16 E.
T. 1 N.
(Joins sheet 103)
(Joins sheet 105)
RIVER
CHICKASAWHAY
CHICKASAWHAY RIVER
Creek
Garland
CREEK
SUBURA
MOBILE
OHIO
Mile
30
29
28
31
32
33
CHOCTAW BASE LINE
(Joins sheet 113) | (114)
0 ½ Mile
Scale 1:15 840
0 3000 Feet

0 ½ Mile Scale 1:15 840 0 3000 Feet

106

N

(Joins sheet 97)

R. 17 E.

T. 1 N.

(Joins sheet 105)

(Joins sheet 107)

Langsdale

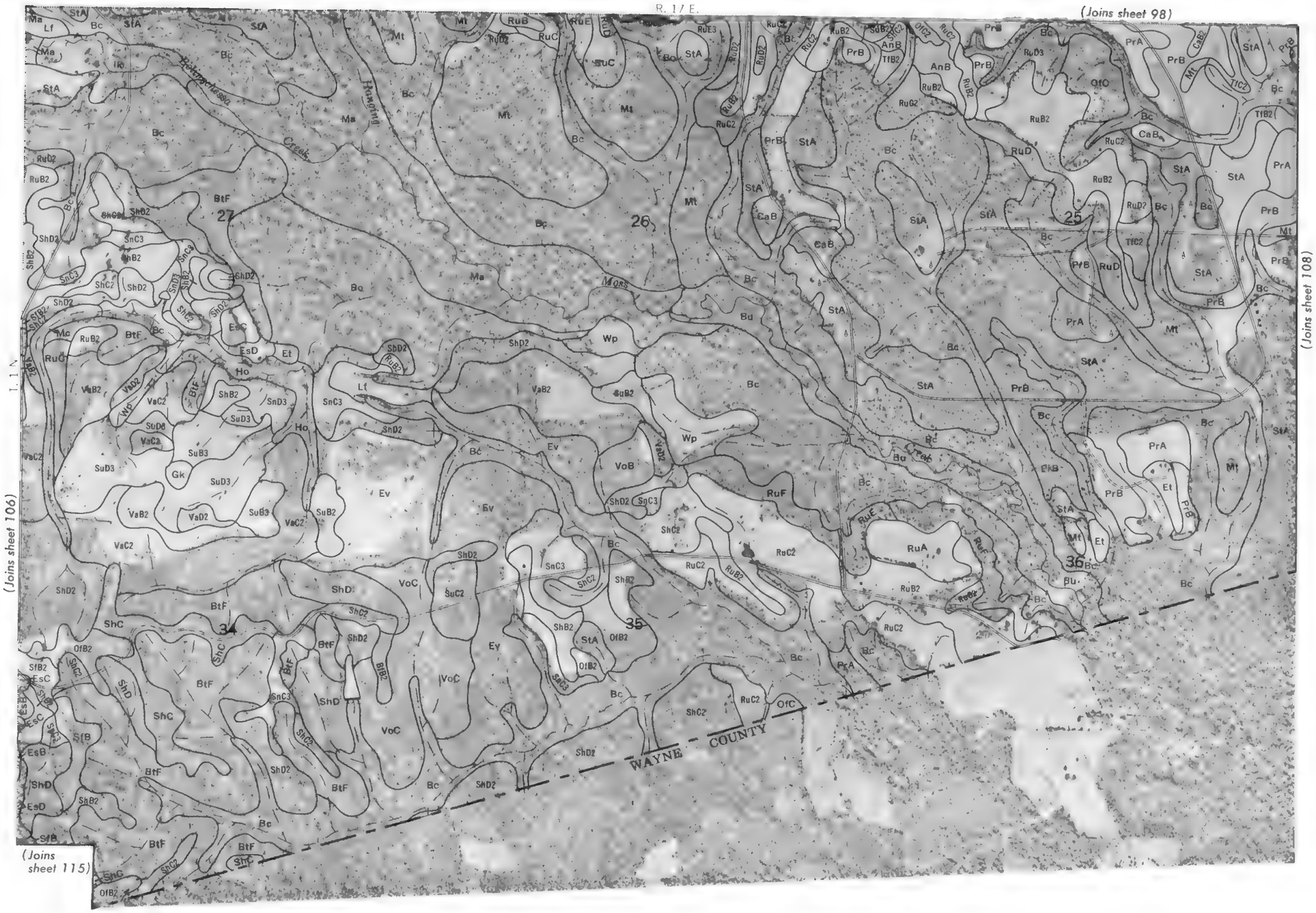
Shiloh

Creek

(Joins sheet 114) | (Joins sheet 115)

CHOCTAW BASE LINE

0 ½ Mile Scale 1:15 840 0 3000 Feet

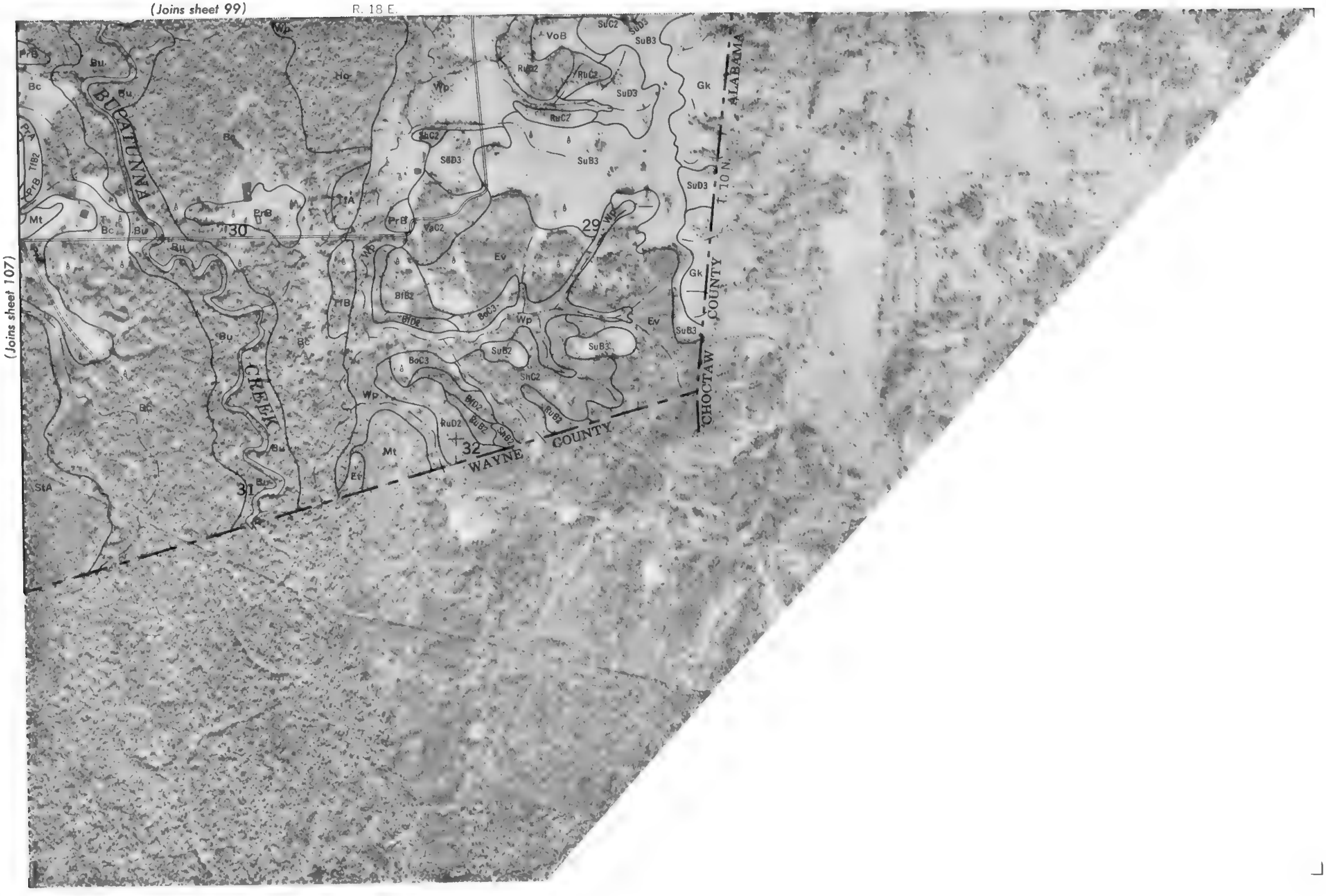


N

(Joins sheet 99)

R. 18 E.

(Joins sheet 107)



0 ½ Mile Scale 1:15 840 0 3000 Feet

CHOCTAW BASE LINE

R. 9 W.

(Joins sheet 100)

N

T. 10 N.

JASPER COUNTY

(Joins sheet 110)

(Joins sheet 116)

Scale 1:15 840

0 ½ Mile

0 3000 Feet

This soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Mississippi Agricultural Experiment Station

Range, township, and section corners shown on this map are indefinite.

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 11

(11)

½ Mile Scale 1:15 840 3000 Feet

110

(Joins sheet 101)

R. 9 W | R. 8 W

CHOCTAW BASE LINE

N

(Joins sheet 109)

(Joins sheet 111)

T. 10 N.

Bogue

Beaverdam

Creek

Sweet Pilgrim Church

(Joins inset, sheet 116)

0 ½ Mile

Scale 1:15 840

0 3000 Feet

(101) | (Joins sheet 102)

R. 8 W.

CHOCTAW BASE LINE

T. 10 N.

N

(Joins sheet 110)

(Joins sheet 112)

(Joins sheet 117)

0 ½ Mile Scale 1:15 840 0 3000 Feet

Range, township, and section corners shown on this map are indefinite.

This map is one of a set compiled on 964 aerial photographs surveyed by the U.S. Conservation Service, United States Department of Agriculture, and the Mississippi Agricultural Experiment Station.

112

(102) | (Joins sheet 103)

R. 8 W. | R. 7 W.

CHOCTAW BASE LINE

N

(Joins sheet 111)

Tribulation Church

Mingo

Lu Creek

Lucullo Creek

SHUBUTA CREEK

SHUBUTA

(Joins inset, sheet 117)

(Joins sheet 113)

T. 10 N.

WAYNE COUNTY

0 ½ Mile Scale 1:15 840 0 3000 Feet

Range, township, and section corners shown on this map are indicate

N

(104) | (Joins sheet 105)

(Joins sheet 105) | (Joins sheet 106)

(Joins sheet 113)

(Joins sheet 115)

R. 14 W. | R. 13 W.

CHOCTAW BASE LINE

T. 11 N.

WAYNE COUNTY

Creek

Ditch

1 2 5 6 7 12

SuB2 SuC2 SuD3 VaB2 VaC2 Ev Gk Ho Wp HuA HuB VaA SuB2 VpB AnB VoB HuB

½ Mile

Scale 1:15 840

0 ½ Mile Scale 1:15 840 0 3000 Feet

Range, township, and section corners shown on this map are indefinite.

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CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 116

N

T. 10 N.

R. 9 W.

R. 8 W.

(Joins sheet 109)

(Joins sheet 110)

(Joins left below)

(Joins right above)

(Joins sheet 117)

JASPER COUNTY

WAYNE COUNTY

WAYNE COUNTY

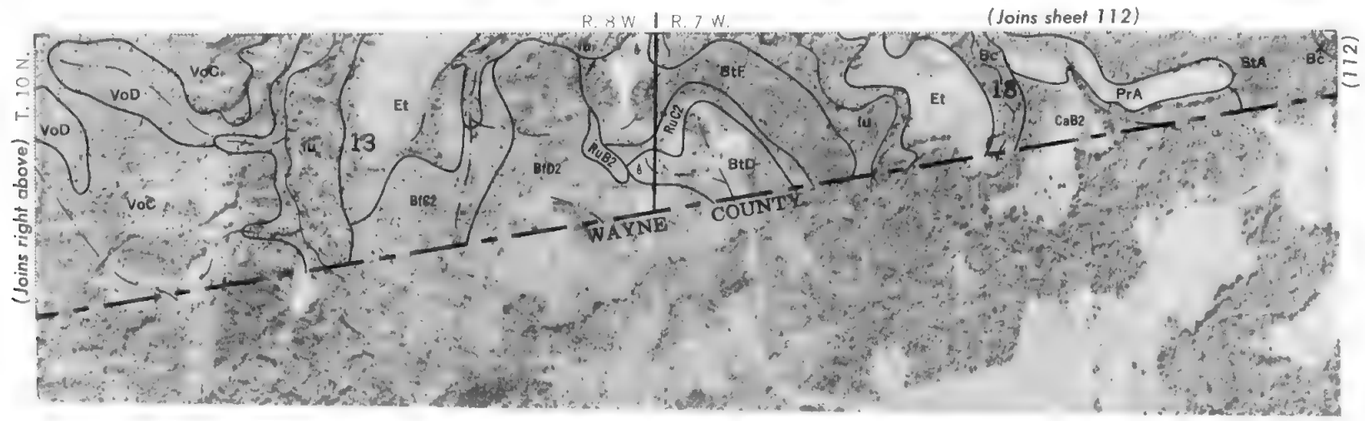
Mill Creek

Bogue Flower Creek

0 ½ Mile

Scale 1:15 840

0 3000 Feet



0 ½ Mile Scale 1:15 840 0 3000 Feet

12

N

(Joins sheet 3)

R 15 E.

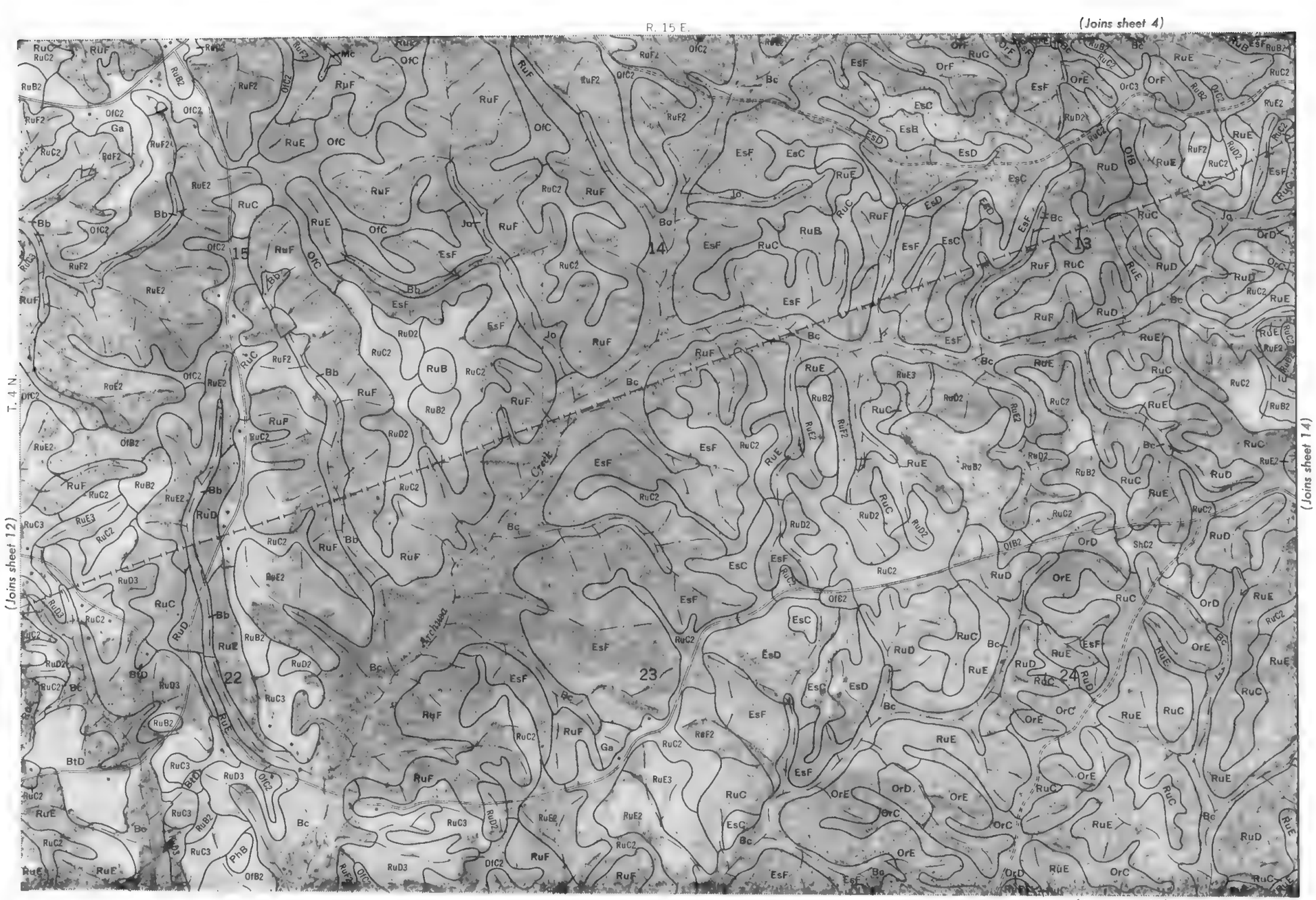
T 4 N.

(Joins sheet 11)

(Joins sheet 13)

(Joins sheet 21)

0 ½ Mile Scale 1:15 840 0 3000 Feet



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14

N

(Joins sheet 5)

R. 16 E.

T. 4 N.

(Joins sheet 13)

(Joins sheet 15)

(Joins sheet 23)

Roy

Union Church

Chickasawhay

Creek

0 ½ Mile Scale 1:15 840 0 3000 Feet

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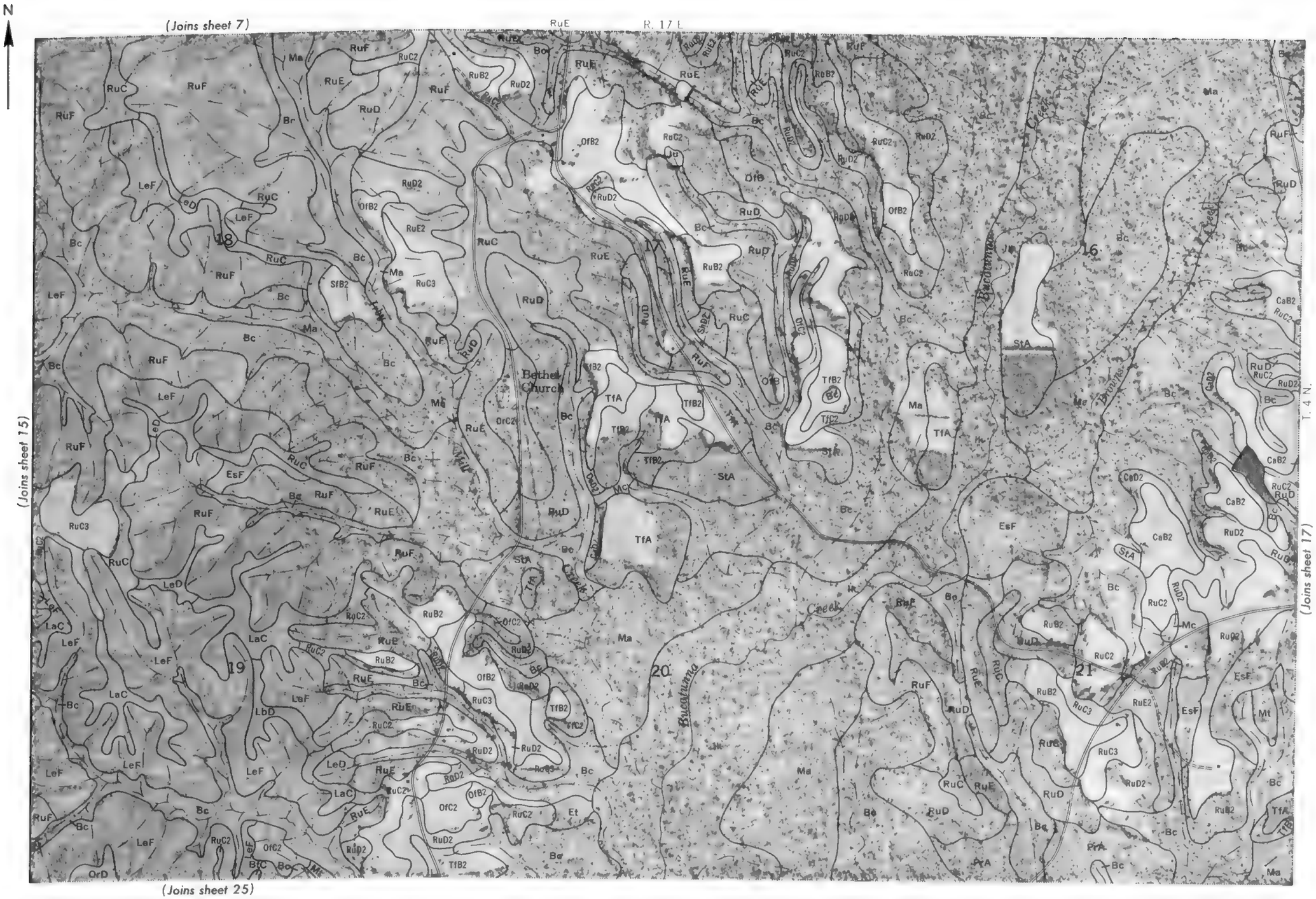
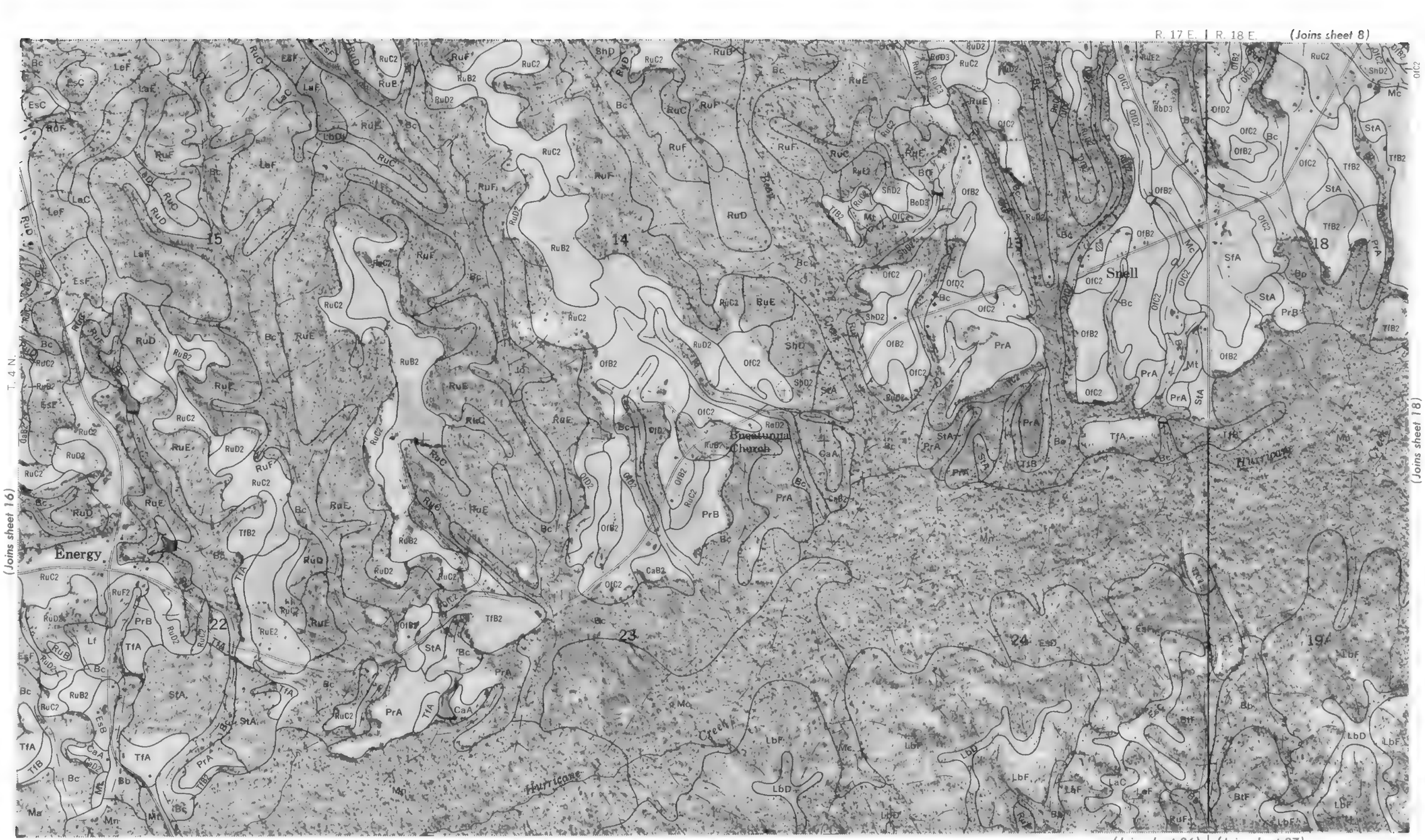
Range, township, and section corners shown on this map are indefinite.

16



0 ½ Mile Scale 1:15 840 0 3000 Feet



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(18)

N

(Joins sheet 9)

R. 18 E.

ALABAMA

CHOCTAW COUNTY

T. 4 N.

(Joins sheet 17)

(Joins sheet 27)

Johnson Branch Creek

Hurricane Creek

Doolechetto Creek

Creek

Creek

Scale 1:15 840

0 ½ Mile

0 3000 Feet

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Range, township, and section corners shown on this map are indefinite.

N

R. 14 E.

LAUDERDALE COUNTY

T. 4 N.

(Joins sheet 1)

(Joins sheet 11)

(Joins sheet 3)

0 ½ Mile Scale 1:15 840 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 20

20

N

(Joins sheet 11)

R. 14 E.

PrB

T. 4 N.

(Joins sheet 19)

(Joins sheet 21)

(Joins sheet 29)

McCants Creek

TUCKASAWHA RIVER

pumping station

SOUTHERN

0 ½ Mile Scale 1:15 840 0 3000 Feet

This map is one of a set compiled in 1964 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Mississippi Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 22

22

N

(Joins sheet 13)

R. 15 E

T. 4 N.

(Joins sheet 21)

(Joins sheet 23)

(Joins sheet 31)

26 25 27 34 35 36

Coker Lake

Scale 1:15 840

0 ½ Mile 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 23

N

(Joins sheet 15)

R. 16 E.

T. 4 N.

(Joins sheet 23)

(Joins sheet 25)

(Joins sheet 33)

Middleton

Elizabeth Church

Long Creek

Mill Creek

Scale 1:15 840

½ Mile

0 3000 Feet

Range townships, and section corners shown on this map are protracted and the Mississippi Base Line

½ Mile

Scale 1:15 840

3000 Feet

(26)

N

R. 17 E.

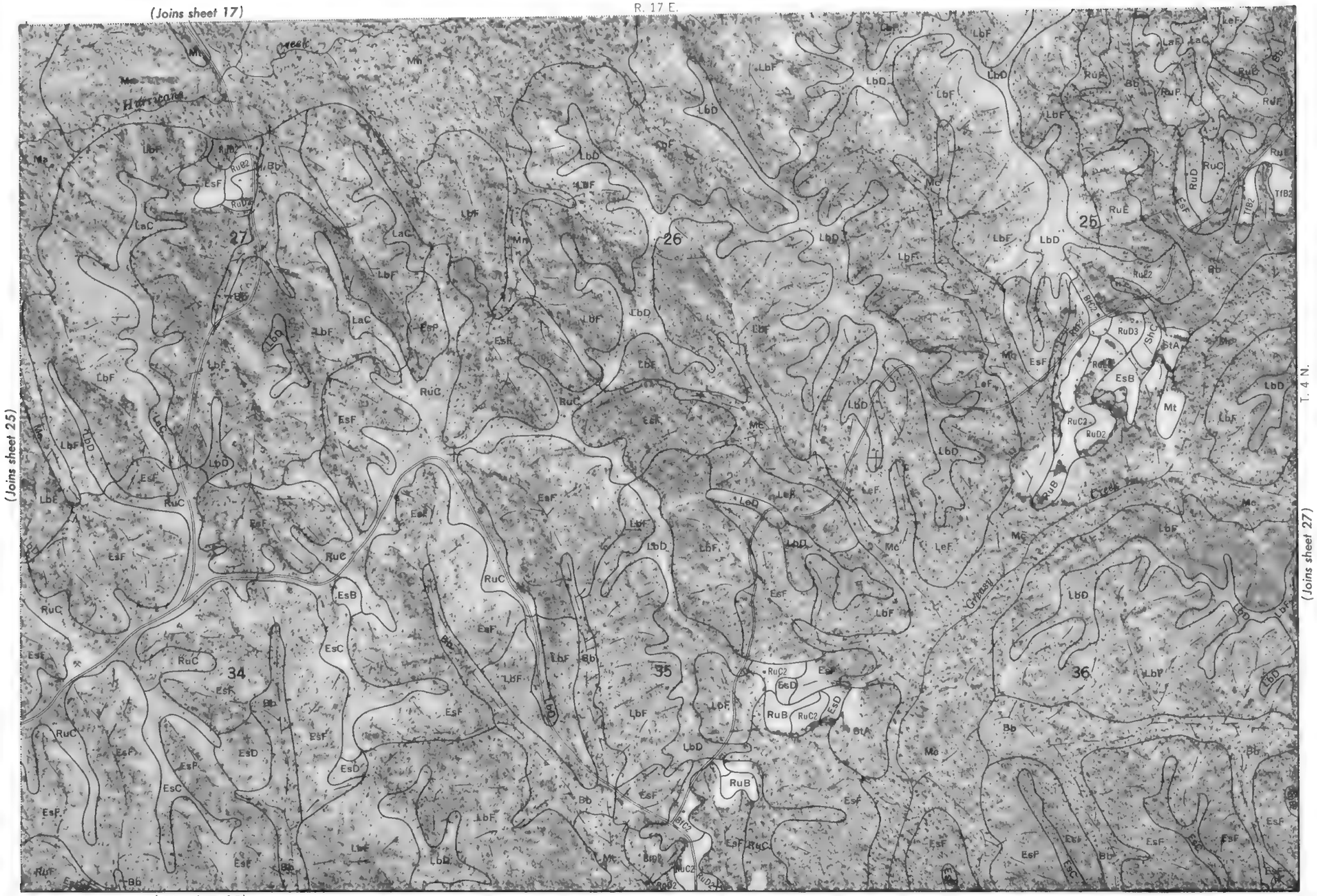
T. 4 N.

(Joins sheet 17)

(Joins sheet 25)

(Joins sheet 27)

(Joins sheet 35)



0 ½ Mile Scale 1:15 840 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 27

27

(Joins sheet 17) | (Joins sheet 18)

R 18 E.

T 4 N.

ALABAMA

CHOCTAW COUNTY

(Joins sheet 26)

(Joins sheet 36)

N

½ Mile Scale 1:15 840 3000 Feet

This map is one of a set compiled in 1964 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Mississippi Agricultural Experiment Station

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15 840 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 29

29

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Range, township, and section corners shown on this map are indefinite.

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 30

N

(Joins sheet 21)

(Joins sheet 29)

(Joins sheet 31)

(Joins sheet 39)

STONEWALL

Stonewall School

Bostic

Bostic Branch

Jones Branch

GULF RAILROAD

CHICKASAWHAY RIVER

½ Mile Scale 1:15 840 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 31

This map was prepared from aerial photographs and a soil survey by the Soil Conservation Service, United States Department of Agriculture and the Mississippi Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

N

(Joins sheet 23)

R. 16 E.

T. 3 N.

(Joins sheet 31)

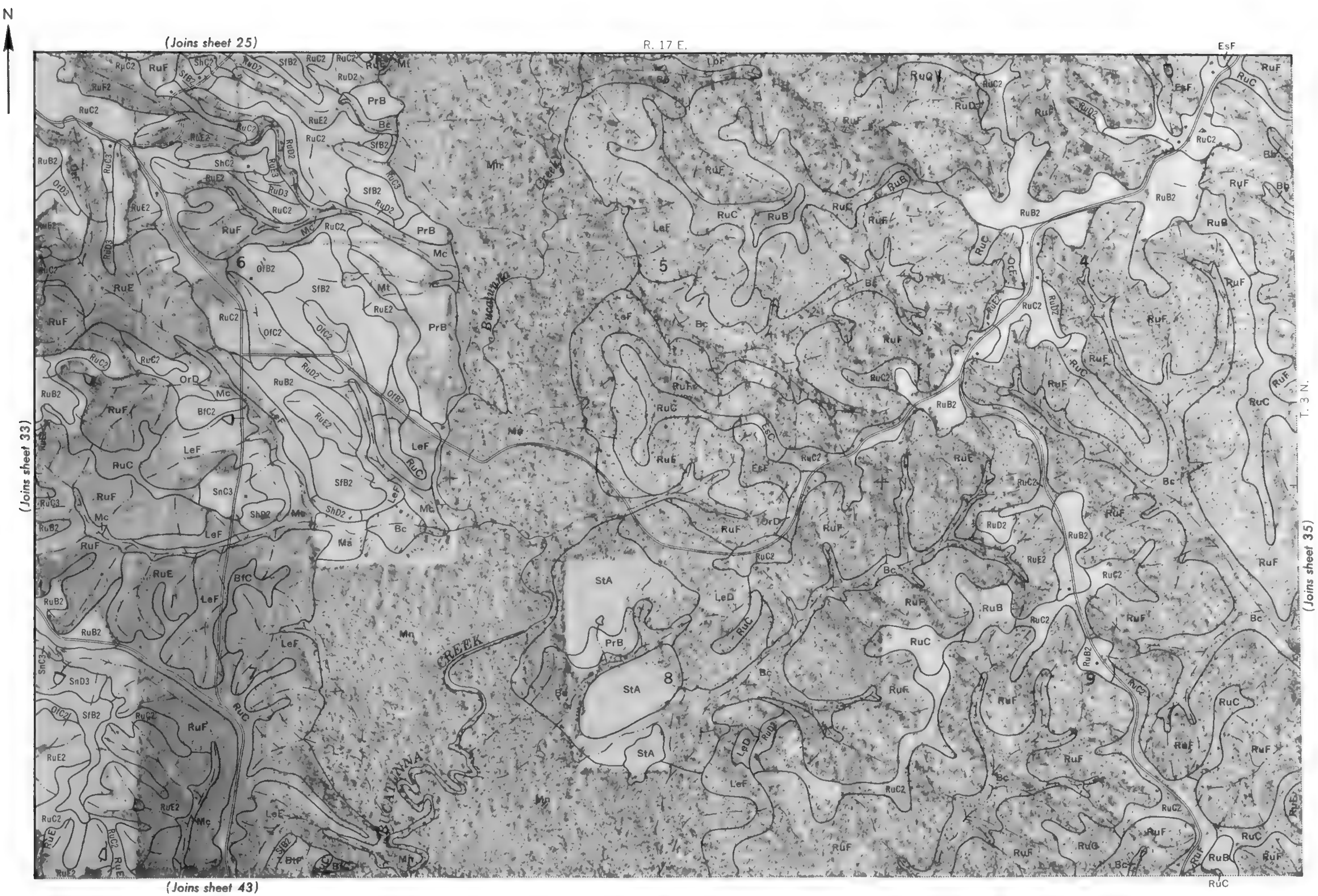
(Joins sheet 33)

(Joins sheet 41)

0 ½ Mile Scale 1:15 840 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 33

0 ½ Mile Scale 1:15 840 0 3000 Feet



0 ½ Mile Scale 1:15 840 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 35

N

R. 17 E.

(Joins sheet 26)

T. 3 N.

(Joins sheet 34)

(Joins sheet 36)

(Joins sheet 44)

This map is one of a set compiled in 1964 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Mississippi Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

N

(Joins sheet 27)

R. 18 E.

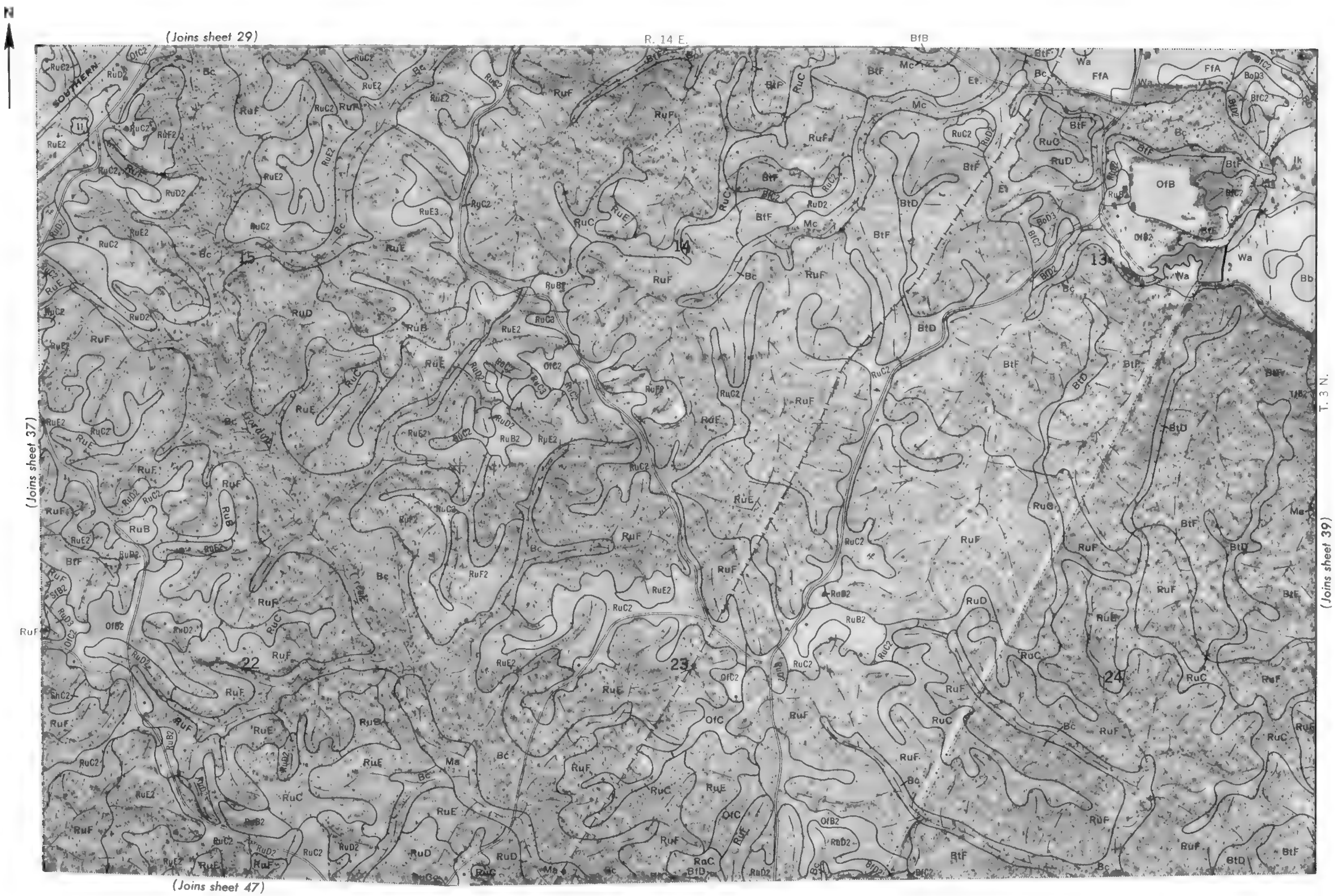
(Joins sheet 35)

(Joins sheet 45)

0 ½ Mile Scale 1:15 840 0 3000 Feet

Range, township, and section corners shown on this map are indefinite.

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 38



½ Mile Scale 1:15 840 0 3000 Feet

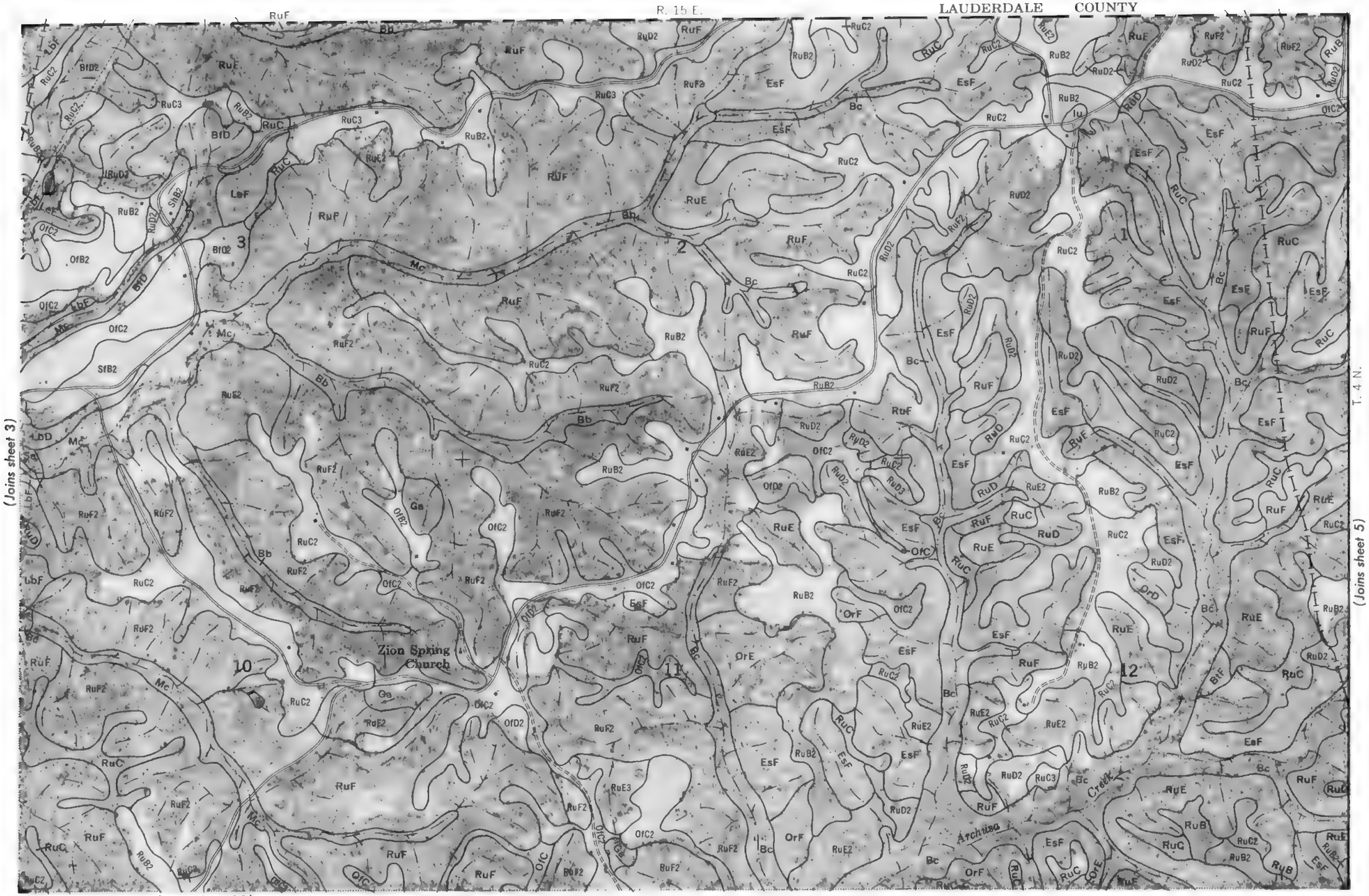
0 ½ Mile Scale 1:15 840 0 3000 Feet

N

R. 15 E.

LAUDERDALE COUNTY

T. 4 N.



(Joins sheet 3)

(Joins sheet 5)

(Joins sheet 13)

0 ½ Mile Scale 1:15 840 0 3000 Feet

N

(Joins sheet 31)

R. 15 E.

T. 3 N.

(Joins sheet 39)

(Joins sheet 41)

(Joins sheet 49)

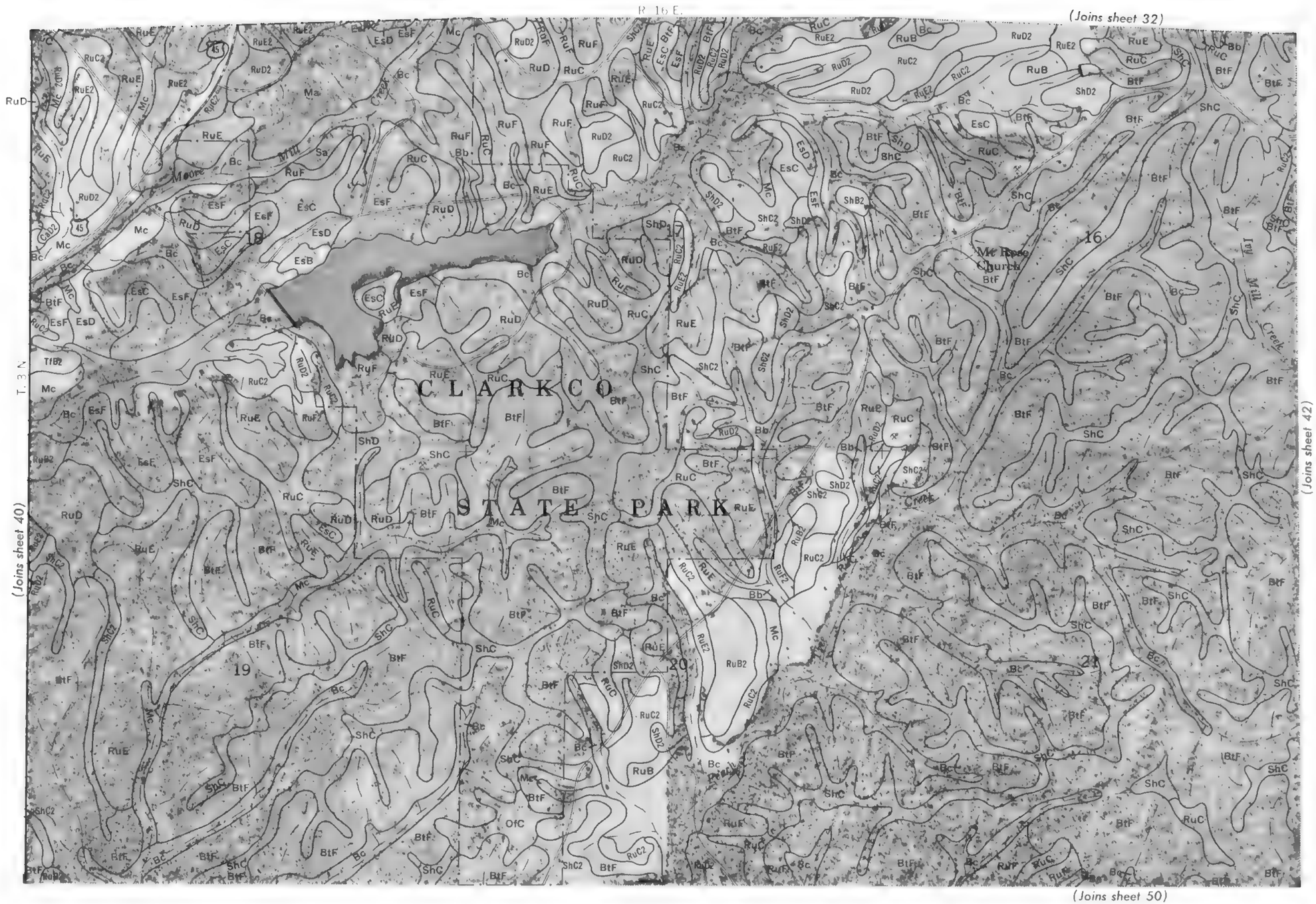
Rolling Creek

Archuso Creek

Moore Creek

GULF MOBILE & OHIO R.R.

0 ½ Mile Scale 1:15 840 0 3000 Feet



CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 42

(42)

N

(Joins sheet 33)

R. 16 E.

T. 3 N.

(Joins sheet 41)

(Joins sheet 43)

(Joins sheet 51)

15 14 13 22 23 24

Long Creek

Mill Creek

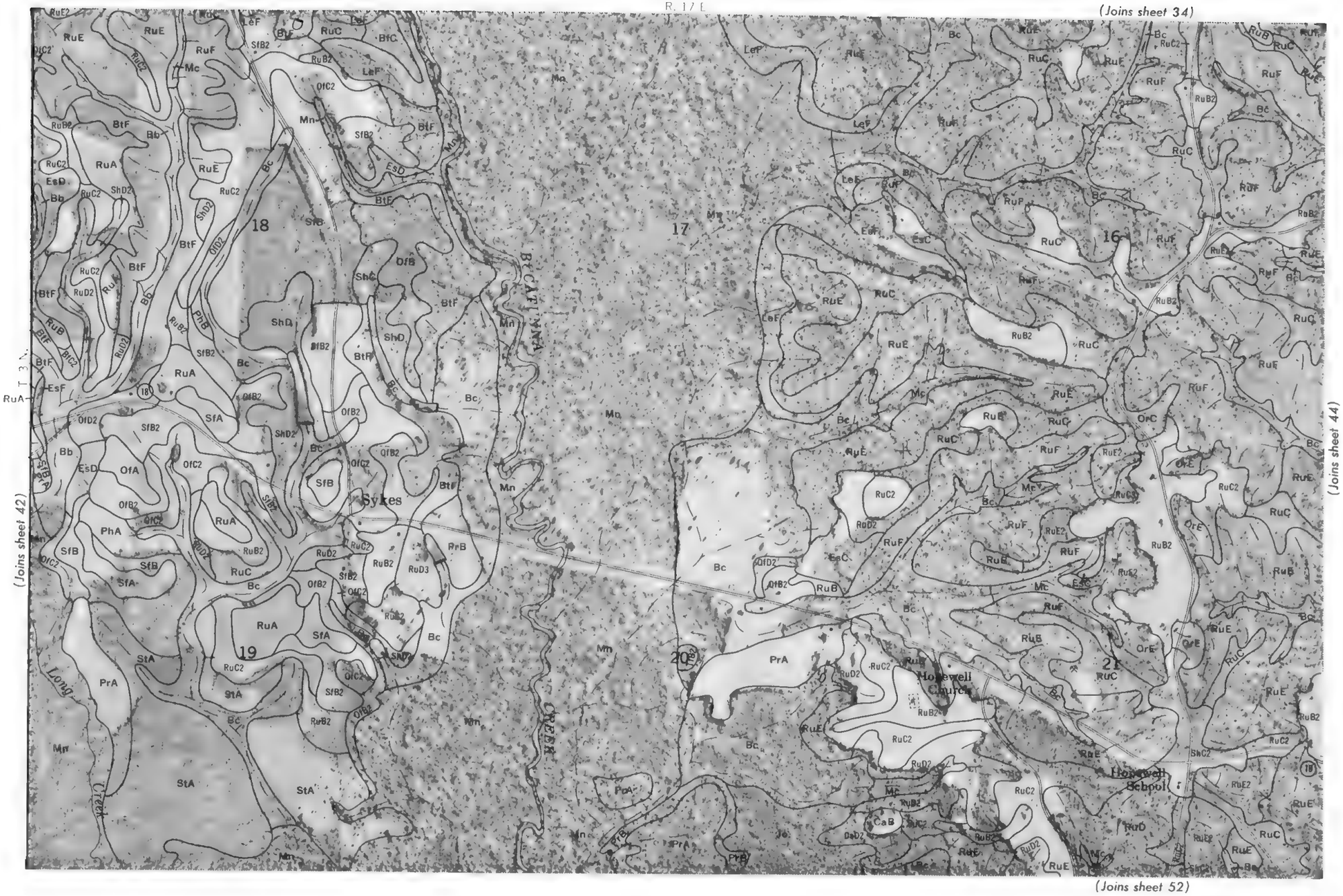
Crossroads Church

Scale 1:15 840

½ Mile

0

3000 Feet



½ Mile Scale 1:15 840 0 1000 Feet

Range, township, and section corners shown on this map are indefinite and the Mississippi Agricultural Experiment ... the Soil Conservation Service - United States Department of Agriculture.

N

(Joins sheet 35)

R. 17 E.

T. 3 N.

(Joins sheet 43)

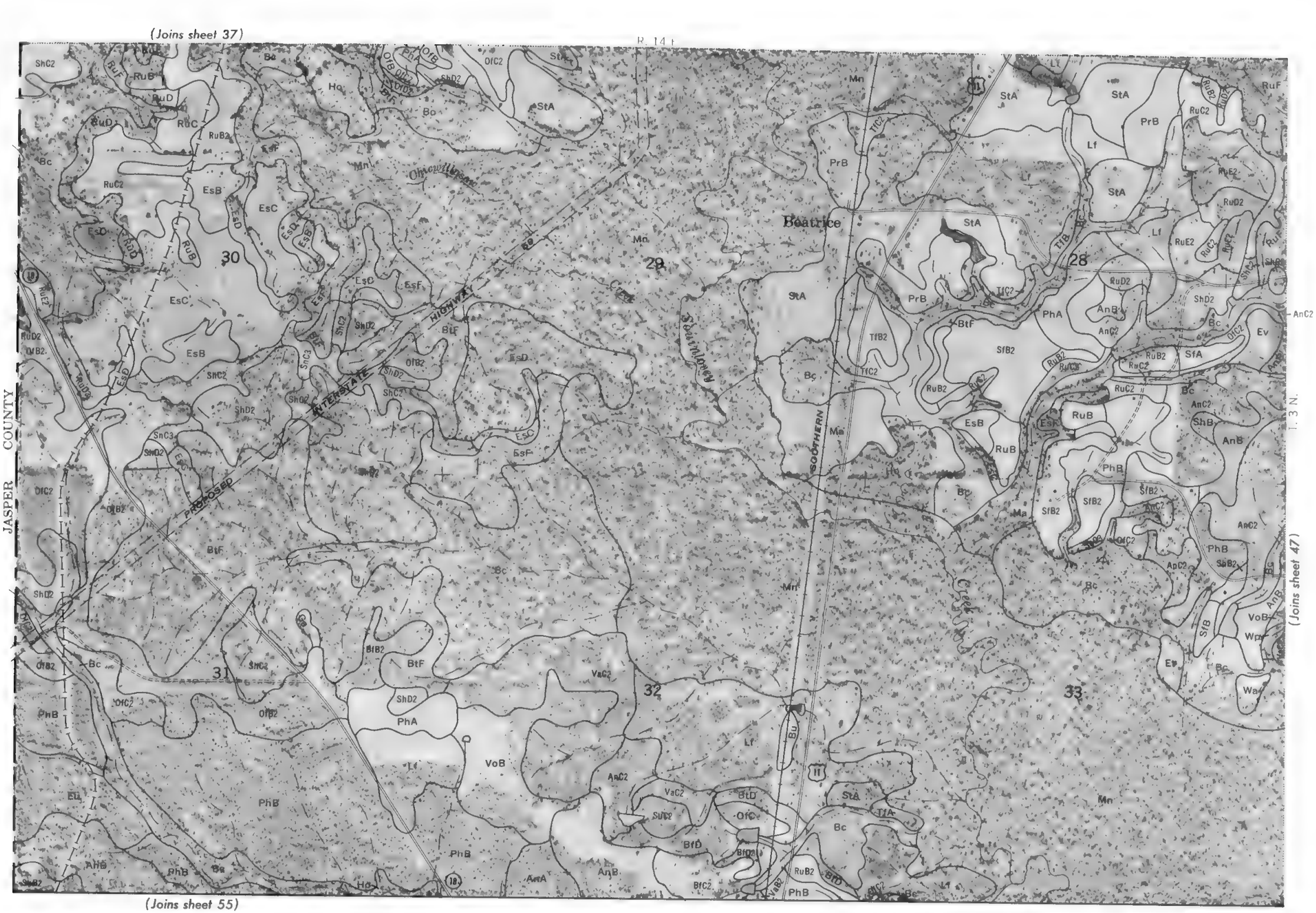
(Joins sheet 45)

(Joins sheet 53)

0 ½ Mile Scale 1:15 840 0 3000 Feet

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15 840 0 3000 Feet


N
(Joins sheet 37)
R. 14 E.
T. 3 N.
JASPER COUNTY
Beatrice
Creek
Shannon
INTERSTATE HIGHWAY 59
PROPOSED
SOUTHERN
29
30
31
32
33
28
(Joins sheet 47)
(Joins sheet 55)
½ Mile
Scale 1:15 840
3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 47

N

(Joins sheet 39)

R 15 E.

T 3 N.

(Joins sheet 47)

(Joins sheet 49)

(Joins sheet 57)

30 29 28 31 32 33

RIVER

Creek

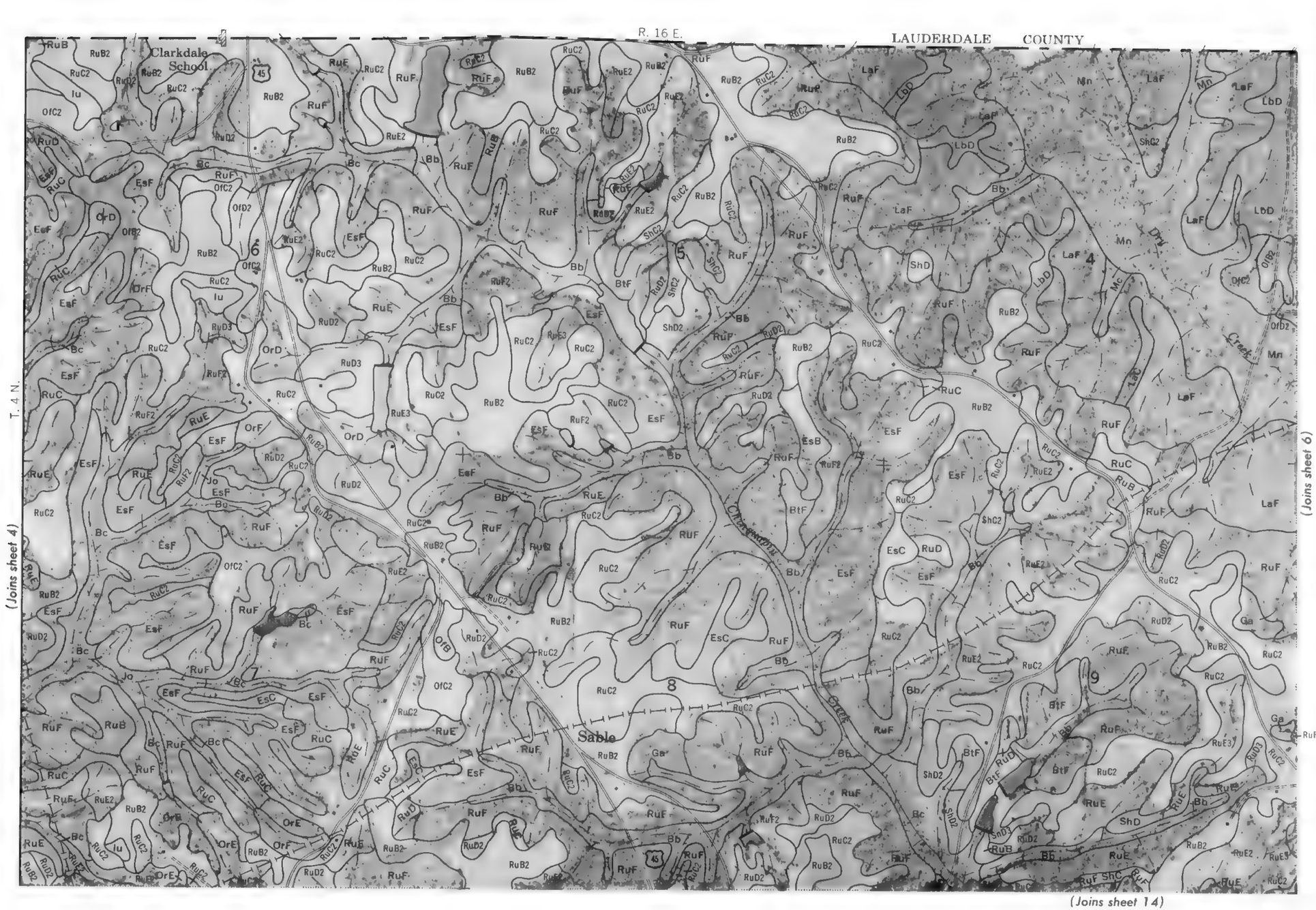
CHICKASAWHAY

0 ½ Mile Scale 1:15 840 0 3000 Feet

0 ½ Mile Scale 1:15 840 0 3000 Feet

This map is one of a set compiled in 1964 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture and the Mississippi Agricultural Experiment Station

Range, township, and section corners shown on this map are indefinite.



CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 50

(50)

N

(Joins sheet 41)

R. 16 E

(Joins sheet 49)

(Joins sheet 51)

(Joins sheet 59)

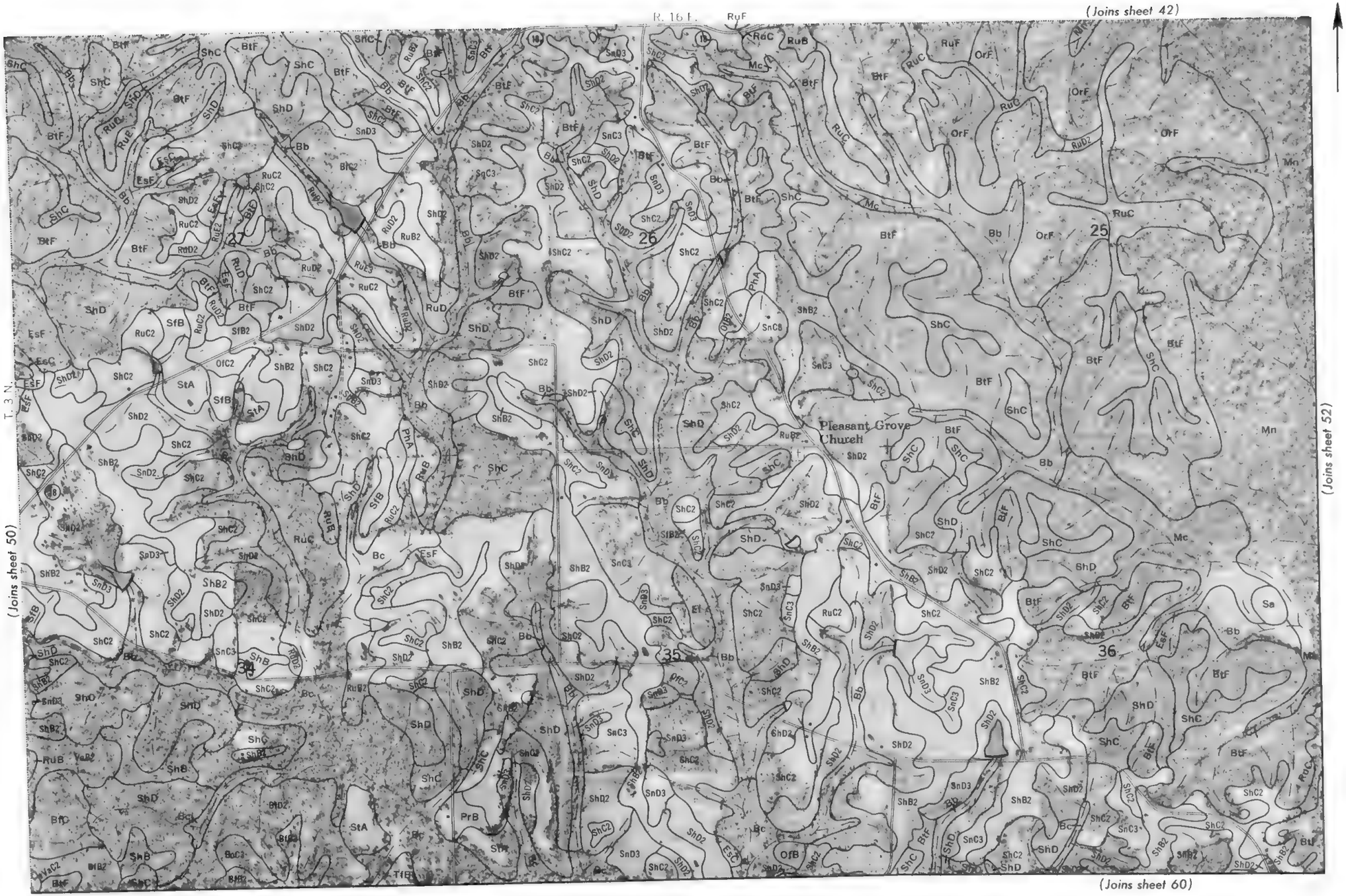
PARK STORY

Peach Tree Creek

30 29 28 31 32 33

½ Mile Scale 1:15 840 0 3000 Feet

Range, township, and section corners



½ Mile 0 Scale 1:15 840 0 3000 Feet

N

(Joins sheet 43)

R. 17 E.

T. 3 N.

(Joins sheet 51)

(Joins sheet 53)

(Joins sheet 61)

Long Creek

BUCATUNNA CREEK

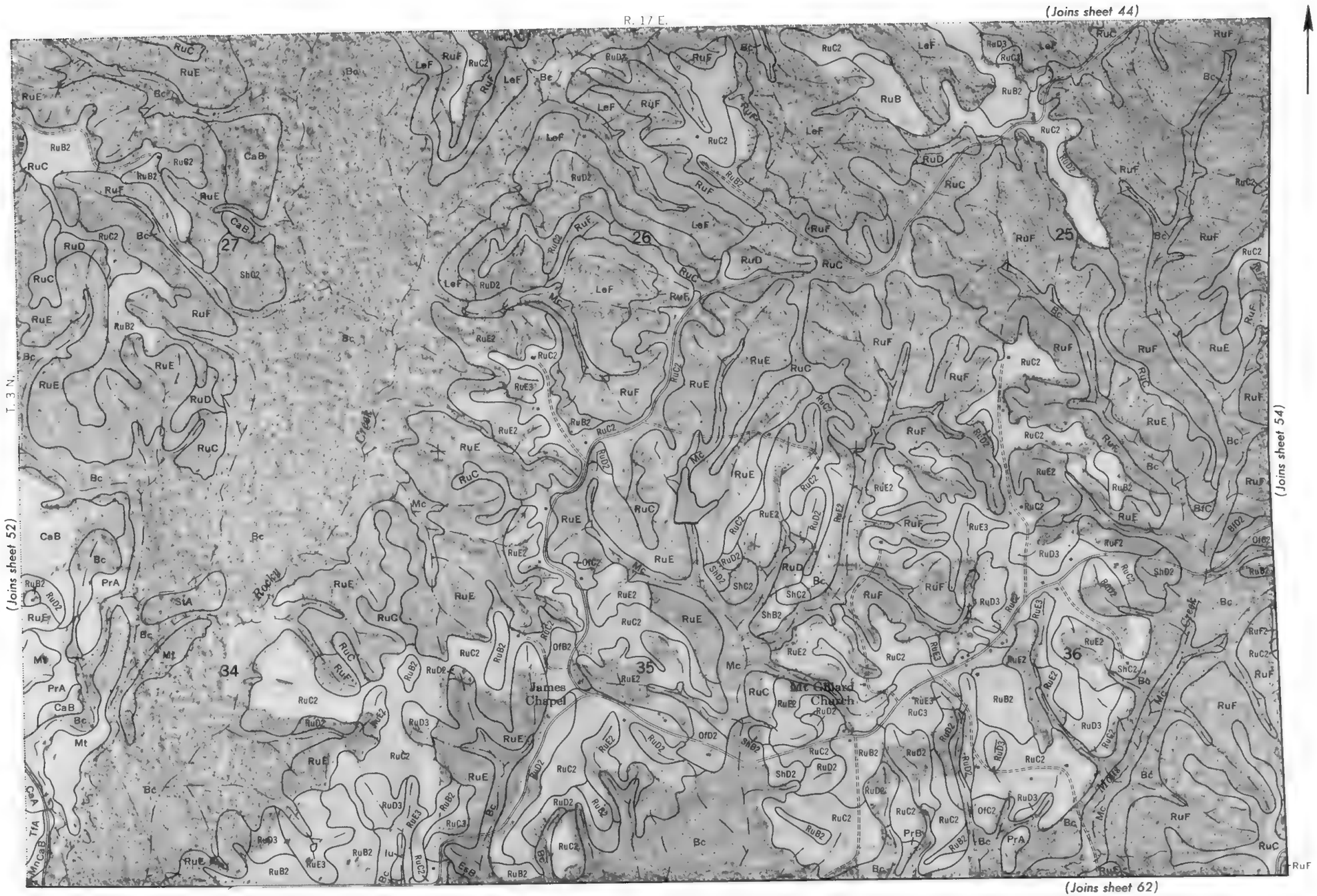
30 29 28 31 32 33

Mn StA PrA Jo RuE Bc Mc RuD2 RuC2 RuB2 RuD ShC2 RuE2 RuC OfB2 BtD2 EsB EsD EsC CaB CaD2 TfA TfB PrB StA FfB BtF ShC ShD CaA Mt

0 ½ Mile Scale 1:15 840 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 53

Range, township, and section corners shown on this map are indefinite.



CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 54

54

N

(Joins sheet 45)

R. 18 E.

(Joins sheet 53)

Pine Ridge

Little Oak Creek

ALABAMA

T. 3 N.

CHOCTAW COUNTY

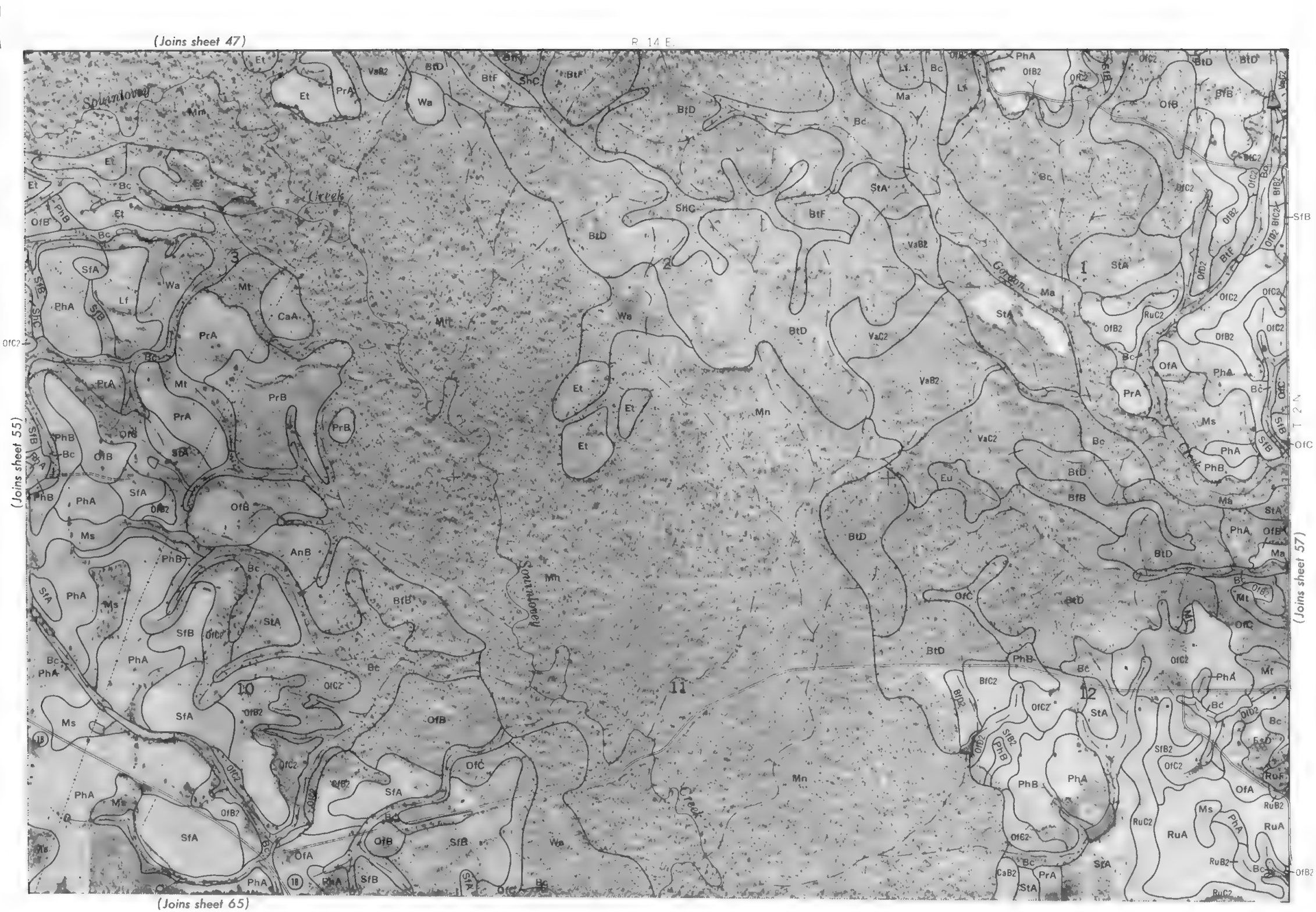
(Joins sheet 63)

0 ½ Mile

Scale 1:15 840

0 3000 Feet

0 ½ Mile Scale 1:15 840 0 3000 Feet


N
(Joins sheet 47)
R. 14 E.
T. 2 N.
(Joins sheet 55)
(Joins sheet 57)
(Joins sheet 65)
Squintaloosa Creek
Gordon Creek
Mn Creek
1
2
3
10
11
12
½ Mile
Scale 1:15 840
0
3000 Feet


N
R. 15 E.
(Joins sheet 48)
T. 2 N.
(Joins sheet 56)
(Joins sheet 58)
(Joins sheet 66)
Elwood
Pleasant Hill Church
Adams Chapel
Gordon
SOUTH LOVE
CREEK
Scale 1:15 840
0
½ Mile
0
3000 Feet

58

N

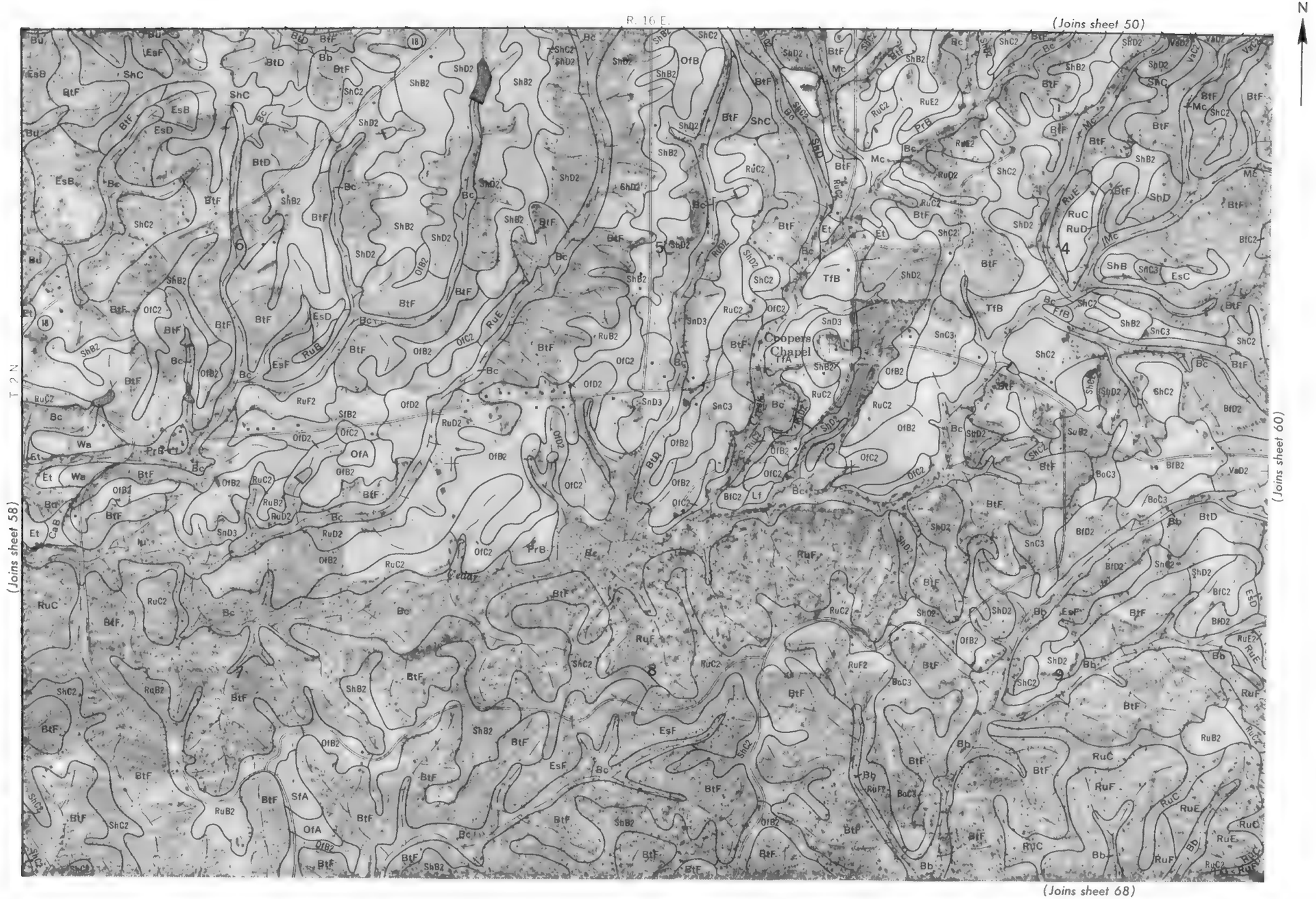
(Joins sheet 49)

(Joins sheet 57)

(Joins sheet 59)

(Joins sheet 67)

0 ½ Mile Scale 1:15 840 0 3000 Feet



6

N

½ Mile Scale 1:15 840 0 3000 Feet

N

(Joins sheet 51)

R. 16 E.

T. 2 N.

(Joins sheet 59)

(Joins sheet 61)

(Joins sheet 69)

Hebron Ridge Church

Tullahoma

Bigeal

Long Branch

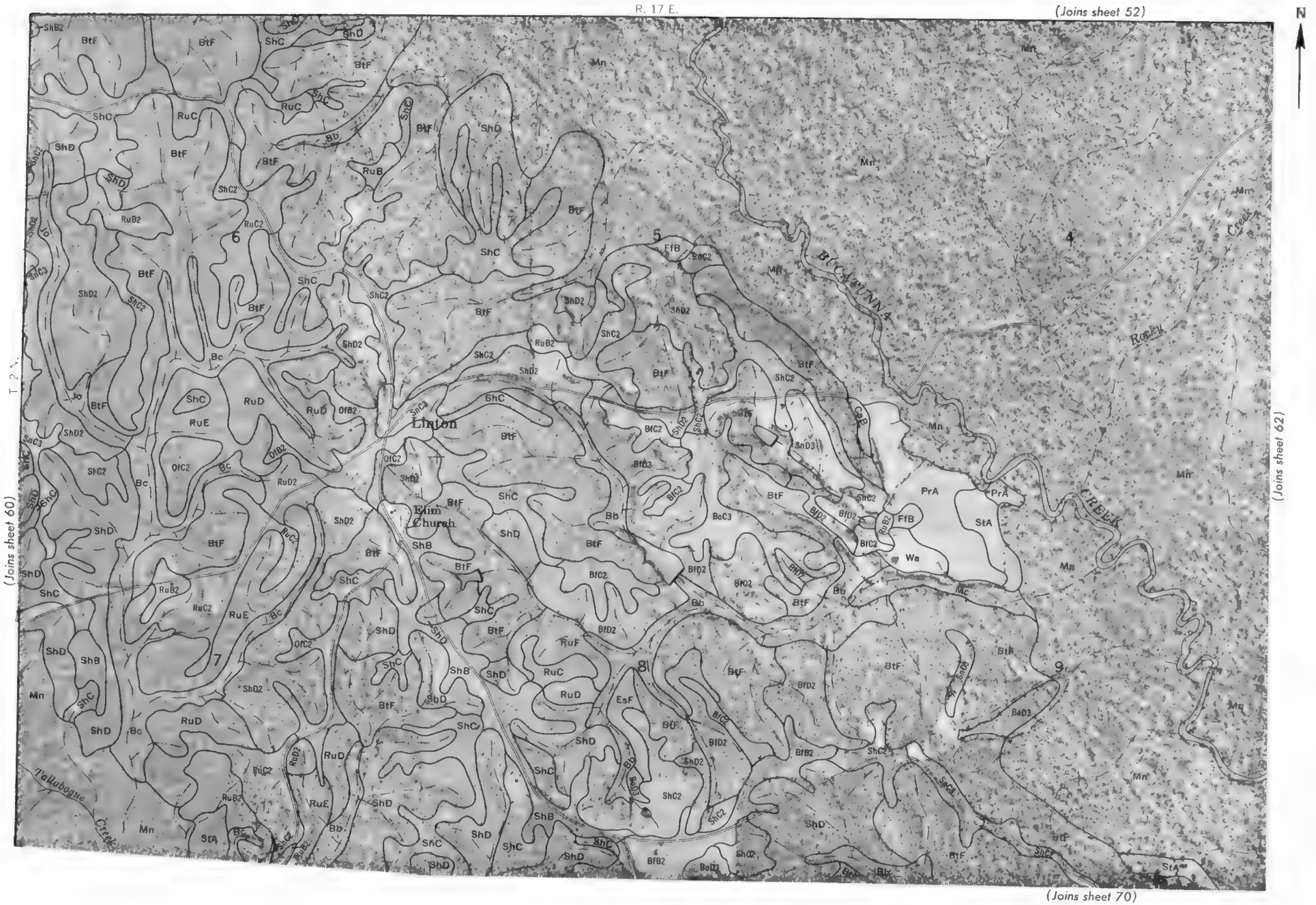
Mn Creek

½ Mile

Scale 1:15 840

0

3000 Feet



0 ½ Mile Scale 1:15 840 0 3000 Feet

62

N

(Joins sheet 53)

R. 17 E.

T. 2 N.

(Joins sheet 61)

(Joins sheet 63)

(Joins sheet 71)

Rocky Creek

Mills Creek

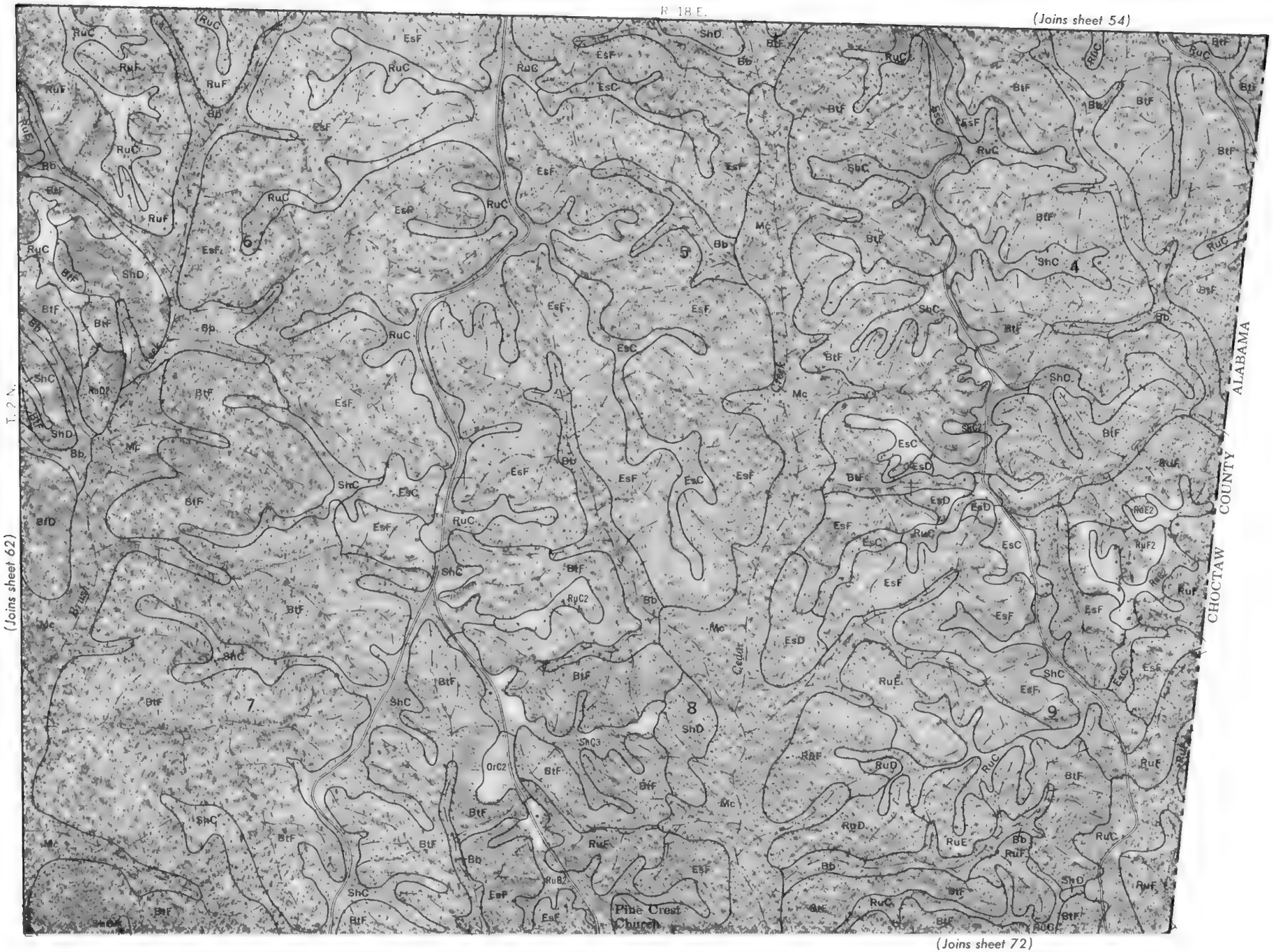
Rigatunna Creek

Brush Creek

1 2 3 10 11 12

0 ½ Mile Scale 1:15 840 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 63



Range, township, and section corners shown on this map are indefinite.

N

(Joins sheet 55)

R. 14 E.

JASPER COUNTY

T. 7 N.

(Joins sheet 65)

(Joins sheet 73)

SOUTHERN

18 17 16 19 20 21

Ev Ho VaB VaB2 VaA SuC2 HuB HuA SuB2 VaC2 StA TfA Ms PhA Bc Wp SuD3 SuC2 EsD SnD3 OfC2 ShD2 ShC2 BfB BtD BfD2 BfB2 BtC2 EsB VaD2 PrA OfB2 Eu Mt TfB2 StB AnB SfB2 OfD2 OfC2 Mc

0 ½ Mile Scale 1:15 840 0 3000 Feet

This map is one of a set compiled in 1964 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Mississippi Agricultural Experiment Station

Range, township, and section numbers shown on this map are indefinite.

0 ½ Mile Scale 1:15 840 0 3000 Feet

(Joins sheet 59)

(Joins sheet 67)

(Joins sheet 69)

(Joins sheet 77)

½ Mile Scale 1:15 840 3000 Feet

T. 2 N.

N

This map is one of a set compiled in 19.. as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Mississippi Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15 840 0 3000 Feet

½ Mile Scale 1:15 840 0 3000 Feet

N

(Joins sheet 61)

R. 17 E.

T. 2 N.

(Joins sheet 69)

(Joins sheet 71)

(Joins sheet 79)

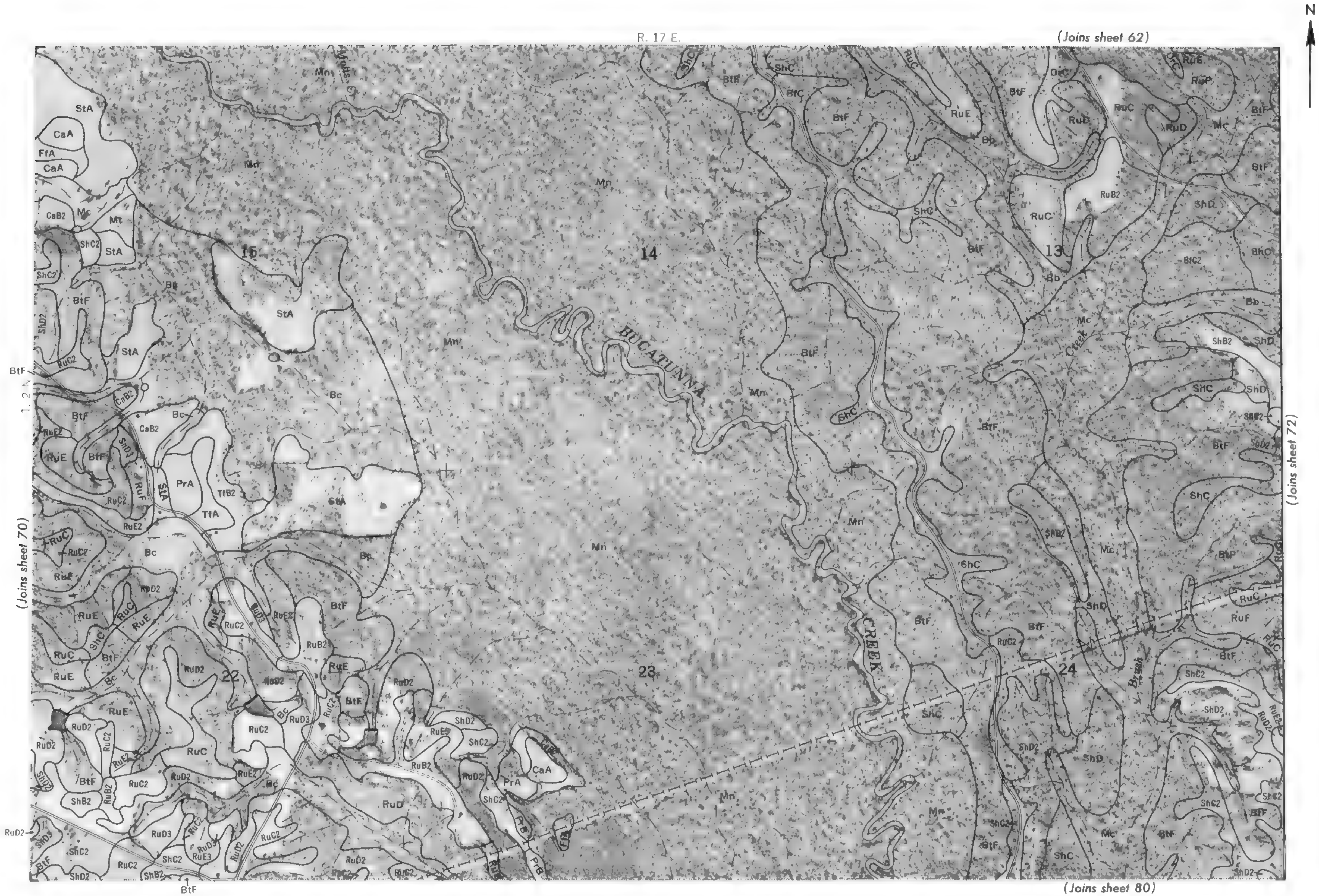
Mannassa

Tallahoggie Creek

Scale 1:15 840

0 ½ Mile

0 3000 Feet



Range, township, and section corners shown on this map are indefinite.

½ Mile Scale 1:15 840 3000 Feet

(72)

N

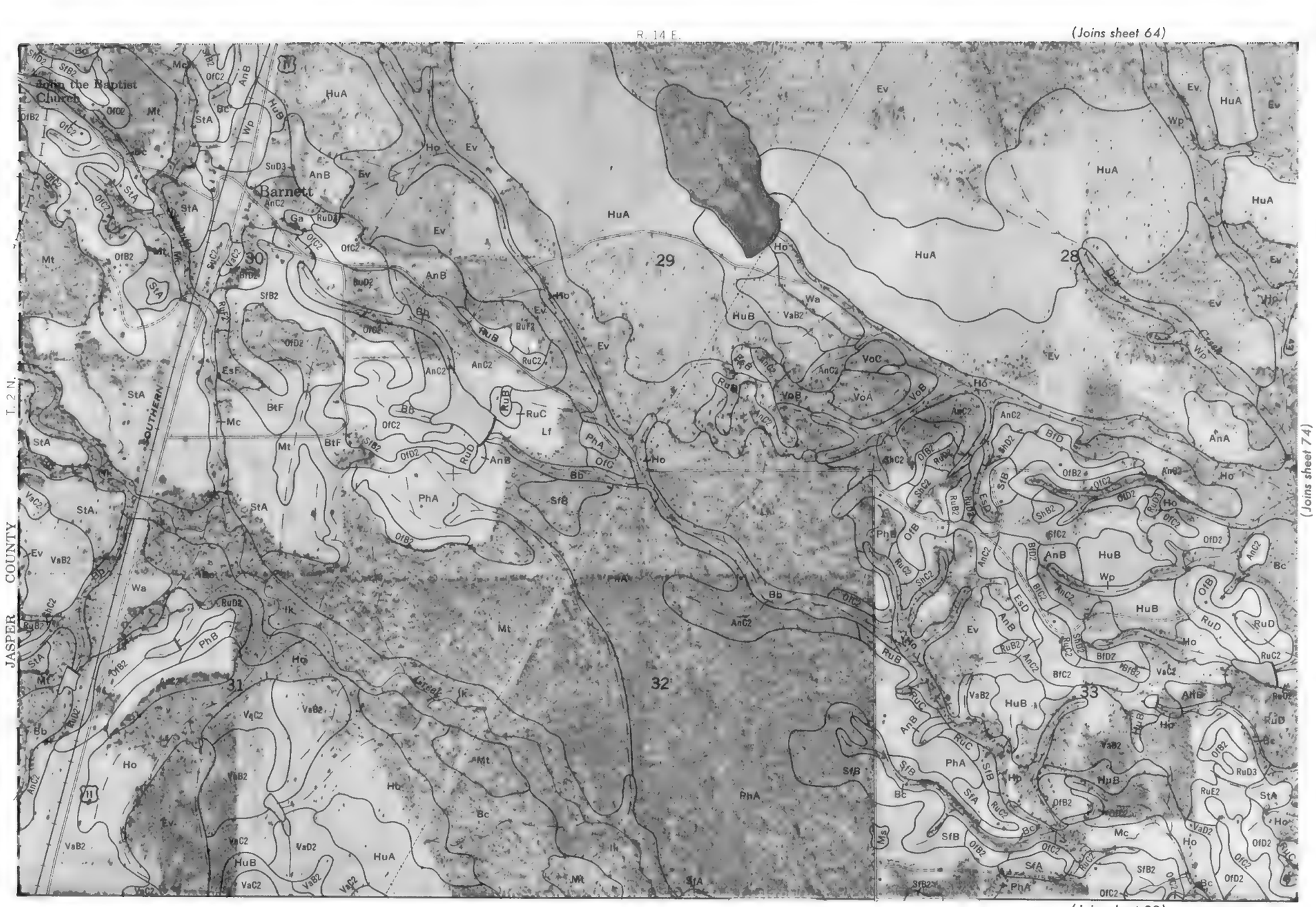
(Joins sheet 63)

R. 18 E.

(Joins sheet 71)

(Joins sheet 81)

½ Mile Scale 1:15 840 0 3000 Feet



N

(Joins sheet 65)

R. 14 E.

T. 2 N.

Harmony

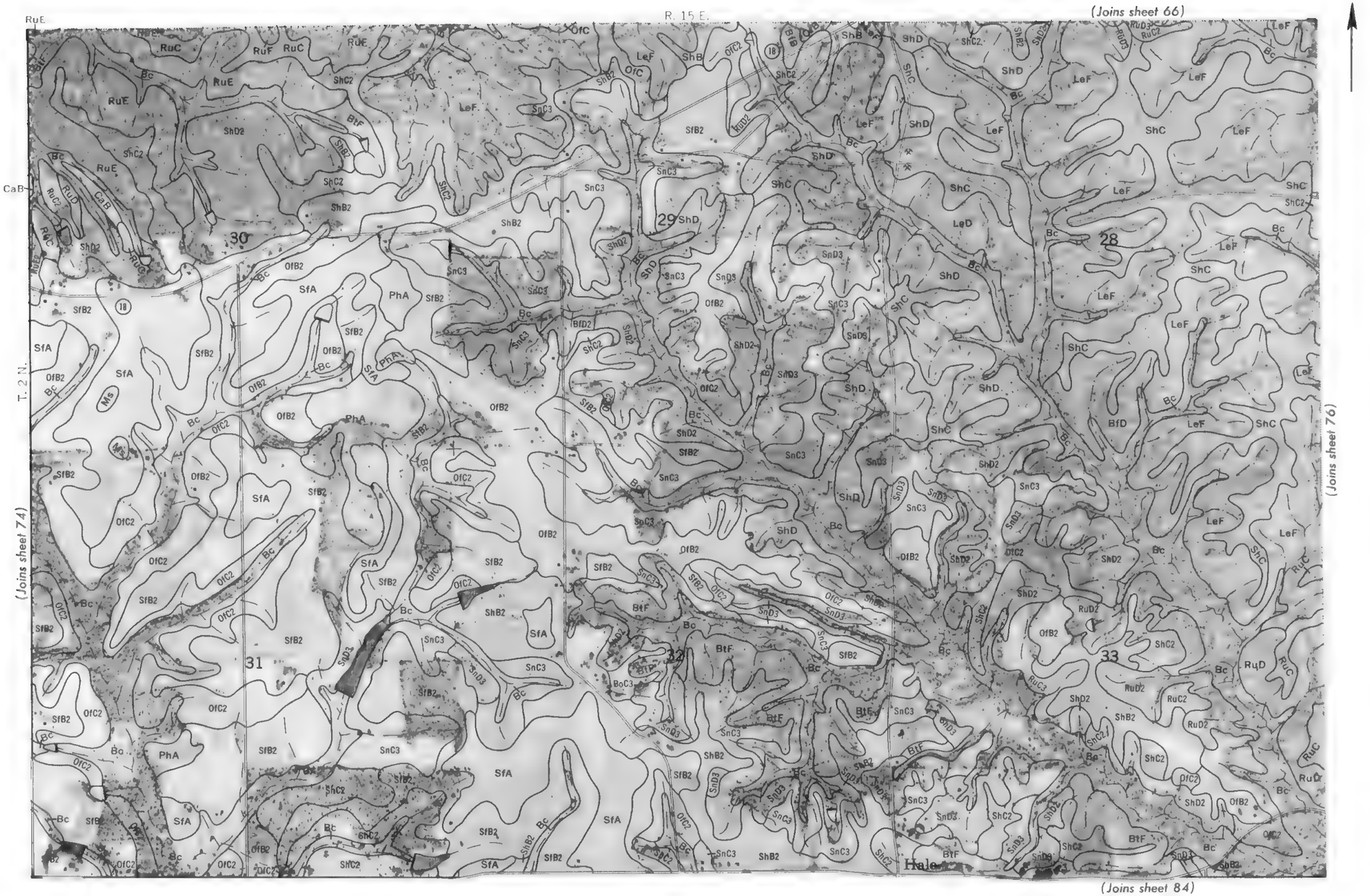
27 26 25 35 34 36

(Joins sheet 73)

(Joins sheet 75)

(Joins sheet 83)

0 ½ Mile Scale 1:15 840 0 3000 Feet



0 ½ Mile Scale 1:15 840 0 3000 Feet

½ Mile Scale 1:15 840 0 3000 Feet

½ Mile Scale 1:15 840 3000 Feet

78

N

(Joins sheet 69)

R. 16 E.

T. 2 N.

(Joins sheet 77)

(Joins sheet 79)

(Joins sheet 87)

Brewer

0 ½ Mile Scale 1:15 840 0 3000 Feet

Range, township, and sect on corners shown on this map are indefinite.

½ Mile Scale 1:15 840 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 8

(8)

N

LAUDERDALE COUNTY

R. 17 E. | R. 18 E.

T. 4 N.

(Joins sheet 7)

(Joins sheet 9)

(Joins sheet 17)

Apostolic Church

½ Mile Scale 1:15 840 0 3000 Feet

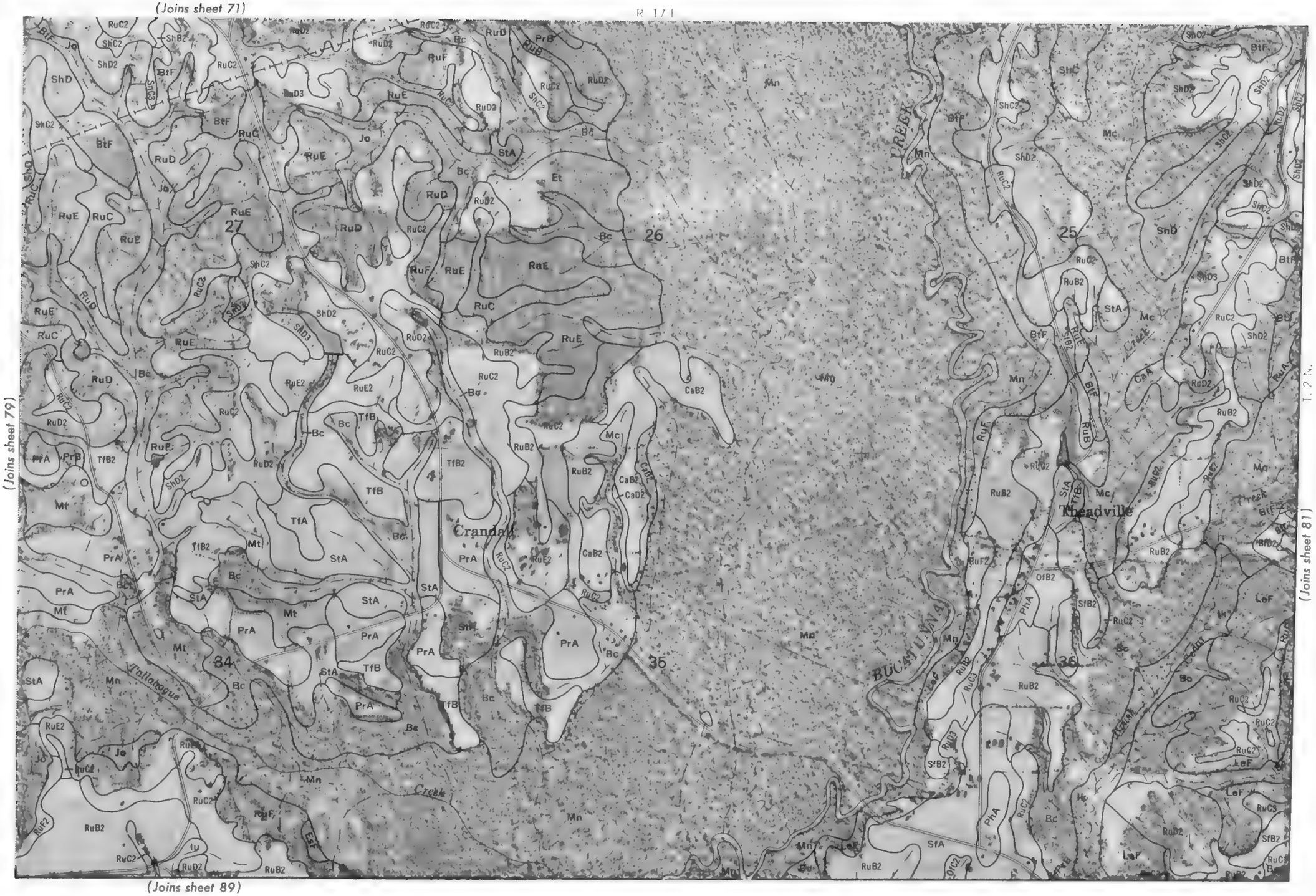
N

(Joins sheet 71)

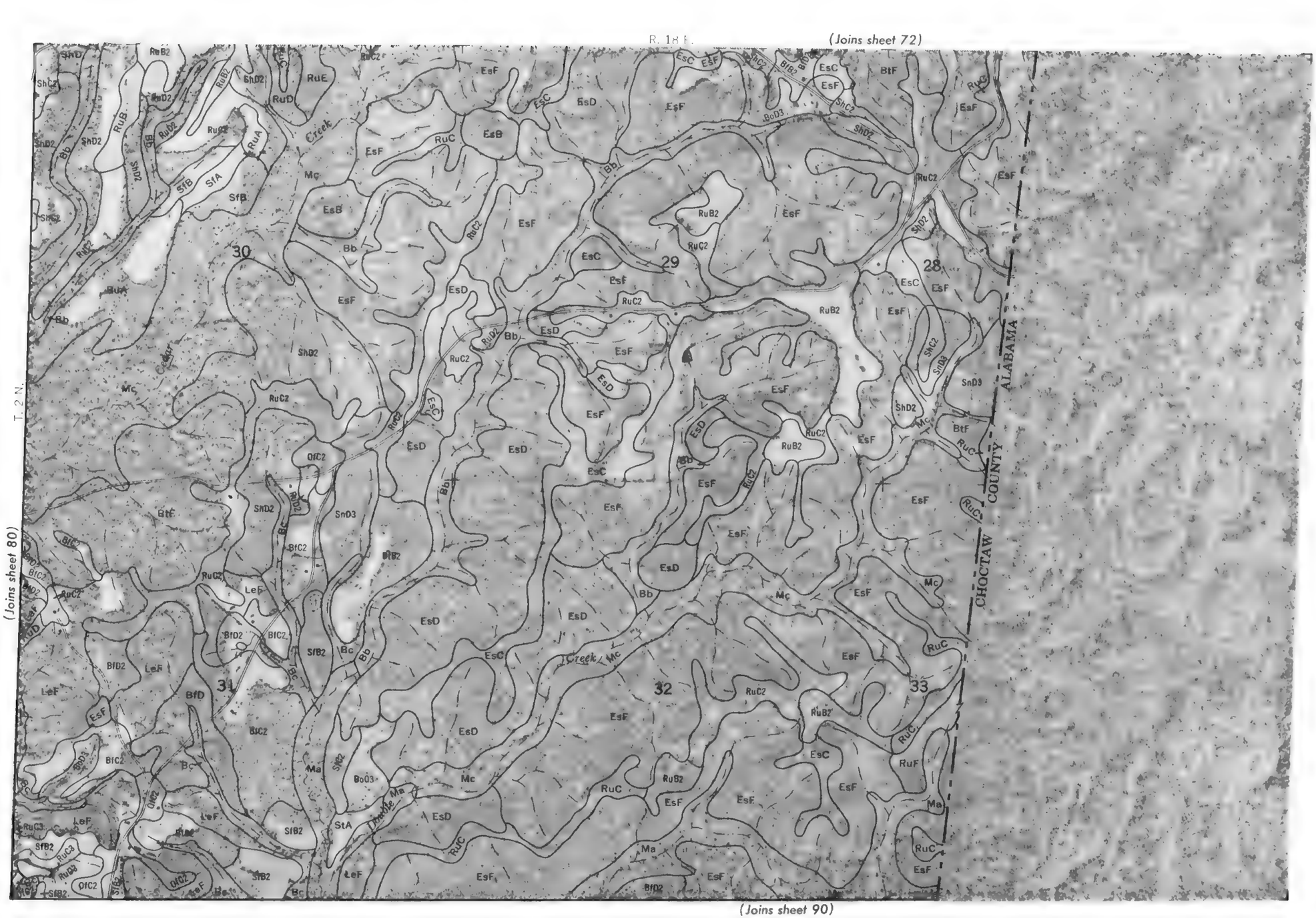
(Joins sheet 79)

(Joins sheet 81)

(Joins sheet 89)



0 ½ Mile Scale 1:15 840 0 3000 Feet



82

N

(Joins sheet 73)

R. 14 E.

T. 1 N.

JASPER COUNTY

(Joins sheet 83)

(Joins sheet 91)

East SfB Church

Shubuta Creek

Holliday Creek

0 ½ Mile Scale 1:15 840 0 3000 Feet


N
(Joins sheet 75)
R. 15 E.
Hale
T. 1 N.
(Joins sheet 83)
(Joins sheet 85)
(Joins sheet 93)
Black Creek
Bonds Creek
Creek
Scale 1:15 840
0
½ Mile
0
3000 Feet

0 ½ Mile Scale 1:15 840 0 3000 Feet

Range, township, and section corners shown on this map are indefinite.

This map is one of a set compiled in 1964 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Mississippi Agricultural Experiment Station

86

N

(Joins sheet 77)

R. 16 E.

T. 1 N.

(Joins sheet 85)

(Joins sheet 87)

(Joins sheet 95)

OHICKASAWHAY RIVER

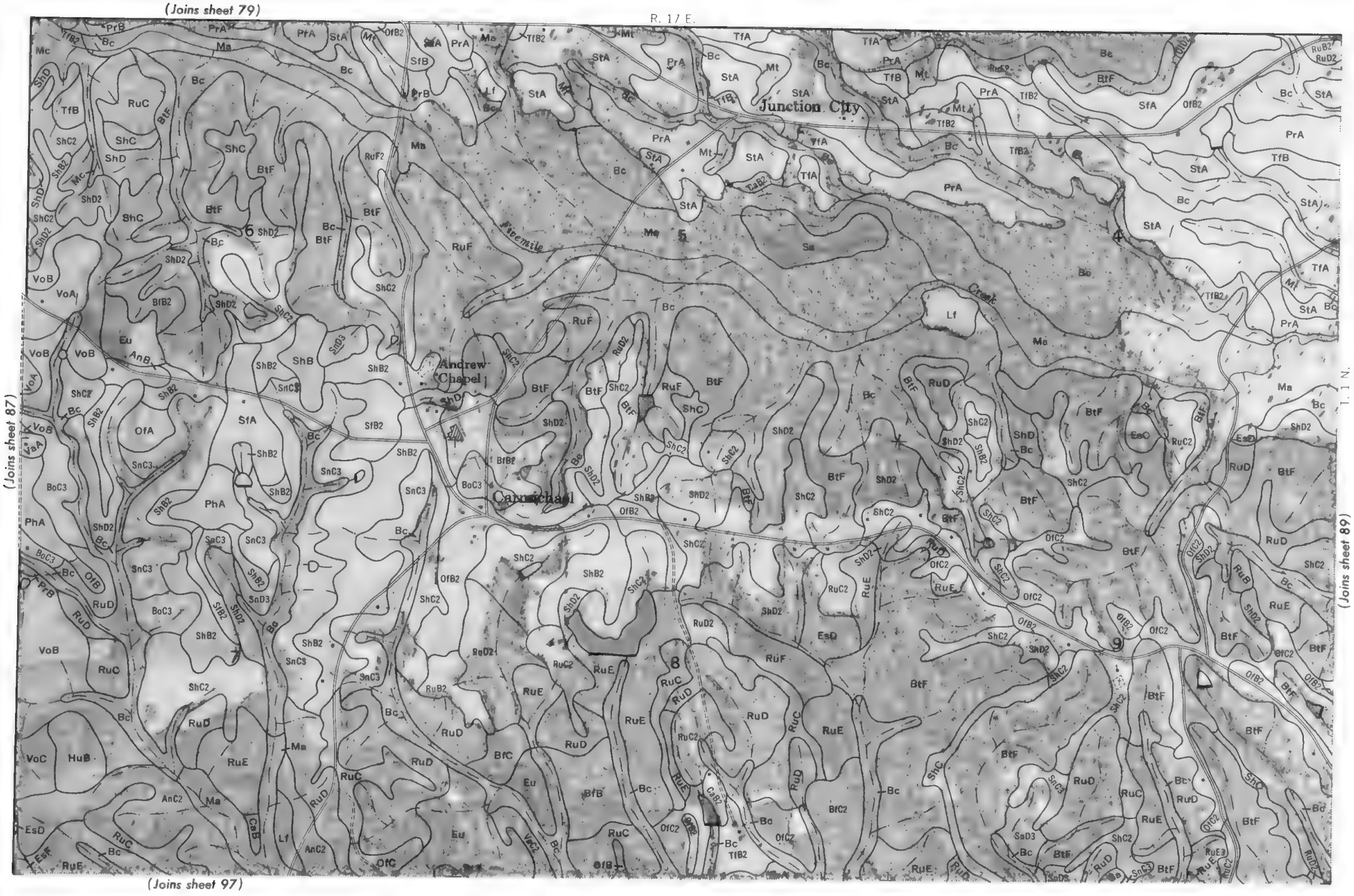
Black Creek

Goodtipper Creek

7 8 9

0 ½ Mile Scale 1:15 840 0 3000 Feet

N



½ Mile Scale 1:15 840 0 3000 Feet

This map is one of a set compiled in 1964 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Mississippi Agricultural Experiment Station

Range, township, and section corners shown on this map are indefinite.


LAUDERDALE COUNTY
R. 18 E.
T. 4 N.
CHOCTAW COUNTY
ALABAMA
N
Hurricane Creek
Branch
Creek
(Joins sheet 8)
(Joins sheet 18)
0 ½ Mile
Scale 1:15 840
0 3000 Feet

N

(Joins sheet 81)

P. 181

(Joins sheet 89)

(Joins sheet 99)

ALABAMA

CHOCTAW COUNTY

T. 11 N.

Mt Pisgah Church

0 ½ Mi

Scale 1:15 840

0 3000 Feet

½ Mile Scale 1:15 840 3000 Feet

0 ½ Mile Scale 1:15 840 0 3000 Feet

94

N

(Joins sheet 85)

R. 15 E.

T. 1 N.

(Joins sheet 93)

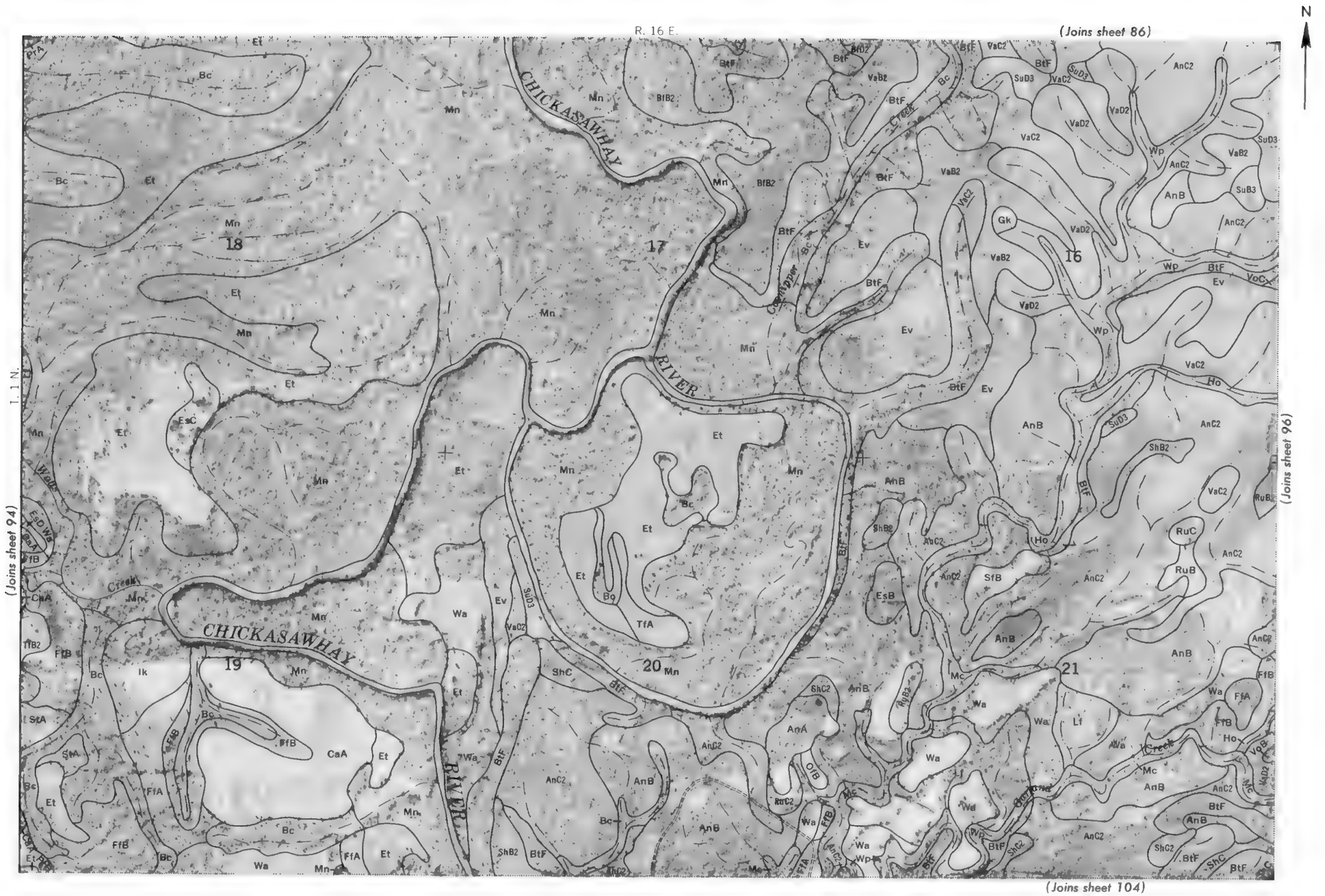
(Joins sheet 95)

(Joins sheet 103)

Scale 1:15 840

½ Mile

3000 Feet



Range, township, and section corners shown on this map are indefinite.


N
(Joins sheet 87)
R. 16 E.
T. 1 N.
(Joins sheet 95)
(Joins sheet 97)
(Joins sheet 105)
15
14
13
22
23
24
Mt Olive Church
Creek
Garland Creek
0
½ Mile
Scale 1:15 840
0
3000 Feet

N

0 ½ Mile Scale 1:15 840 0 3000 Feet

CLARKE COUNTY, MISSISSIPPI — SHEET NUMBER 99

0 ½ Mile Scale 1:15 840 0 3000 Feet

SOIL LEGEND

The first capital letter is the initial one of the soil name. A second capital letter, A, B, C, D, E, or F, shows the slope. Symbols for nearly level soils, such as Bibb soils, do not contain a slope letter. Neither does the symbol for a land type that has a considerable range in slope--Gullied land, acid. The number, 2 or 3, in a symbol indicates that the soil is eroded or severely eroded.

SYMBOL	NAME
AnA	Angie fine sandy loam, 0 to 2 percent slopes
AnB	Angie fine sandy loam, 2 to 5 percent slopes
AnC2	Angie fine sandy loam, 5 to 8 percent slopes, eroded
Bb	Bibb soils
Bc	Bibb and Chastain fine sandy loams
BfB	Boswell fine sandy loam, 2 to 5 percent slopes
BfB2	Boswell fine sandy loam, 2 to 5 percent slopes, eroded
BfC	Boswell fine sandy loam, 5 to 8 percent slopes
BfC2	Boswell fine sandy loam, 5 to 8 percent slopes, eroded
BfD	Boswell fine sandy loam, 8 to 12 percent slopes
BfD2	Boswell fine sandy loam, 8 to 12 percent slopes, eroded
BoC3	Boswell sandy clay loam, 5 to 8 percent slopes, severely eroded
BoD3	Boswell sandy clay loam, 8 to 12 percent slopes, severely eroded
BtD	Boswell, Shubuta, and Cuthbert fine sandy loams, 5 to 12 percent slopes
BtF	Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes
Bu	Bruno loamy fine sand
CaA	Cahaba fine sandy loam, 0 to 2 percent slopes
CaB	Cahaba fine sandy loam, 2 to 5 percent slopes
CaB2	Cahaba fine sandy loam, 2 to 5 percent slopes, eroded
CaD2	Cahaba fine sandy loam, 5 to 12 percent slopes, eroded
EsB	Eustis loamy sand, 2 to 5 percent slopes
EsC	Eustis loamy sand, 5 to 8 percent slopes
EsD	Eustis loamy sand, 8 to 12 percent slopes
EsF	Eustis loamy sand, 12 to 35 percent slopes
Et	Eustis loamy sand, terrace
Eu	Eutaw clay, deep
Ev	Eutaw-Vaiden clays, deep
FfA	Flint fine sandy loam, loamy substratum, 0 to 2 percent slopes
FfB	Flint fine sandy loam, loamy substratum, 2 to 5 percent slopes
Ga	Gullied land, acid
Gk	Gullied land, alkaline
Ho	Houlka clay
HuA	Houston clay, 0 to 2 percent slopes
HuB	Houston clay, 2 to 5 percent slopes
Ik	Iuka fine sandy loam
Iu	Iuka soils, local alluvium

SYMBOL	NAME
Jo	Johnston loam
LaC	Lauderdale stony fine sandy loam, 5 to 8 percent slopes
LaF	Lauderdale stony fine sandy loam, 12 to 45 percent slopes
LbD	Lauderdale-Boswell complex, 5 to 12 percent slopes
LbF	Lauderdale-Boswell complex, 17 to 45 percent slopes
LeD	Lauderdale-Eustis complex, 8 to 12 percent slopes
LeF	Lauderdale-Eustis complex, 12 to 45 percent slopes
Lf	Leaf fine sandy loam
Ma	Mantachie fine sandy loam
Mc	Mantachie soils, local alluvium
Mn	Mantachie, Bibb, and Iuka soils
Ms	Mashulaville loam
Mt	Mashulaville fine sandy loam, terrace
OfA	Ora fine sandy loam, 0 to 2 percent slopes
OfB	Ora fine sandy loam, 2 to 5 percent slopes
OfB2	Ora fine sandy loam, 2 to 5 percent slopes, eroded
OfC	Ora fine sandy loam, 5 to 8 percent slopes
OfC2	Ora fine sandy loam, 5 to 8 percent slopes, eroded
OfD2	Ora fine sandy loam, 8 to 12 percent slopes, eroded
OrC	Orangeburg fine sandy loam, 5 to 8 percent slopes
OrC2	Orangeburg fine sandy loam, 5 to 8 percent slopes, eroded
OrC3	Orangeburg fine sandy loam, 5 to 8 percent slopes, severely eroded
OrD	Orangeburg fine sandy loam, 8 to 12 percent slopes
OrD3	Orangeburg fine sandy loam, 8 to 12 percent slopes, severely eroded
OrE	Orangeburg fine sandy loam, 12 to 17 percent slopes
OrF	Orangeburg fine sandy loam, 17 to 35 percent slopes
PhA	Pheba fine sandy loam, 0 to 2 percent slopes
PhB	Pheba fine sandy loam, 2 to 5 percent slopes
PrA	Prentiss fine sandy loam, 0 to 2 percent slopes
PrB	Prentiss fine sandy loam, 2 to 5 percent slopes
RuA	Ruston fine sandy loam, 0 to 2 percent slopes
RuB	Ruston fine sandy loam, 2 to 5 percent slopes
RuB2	Ruston fine sandy loam, 2 to 5 percent slopes, eroded
RuC	Ruston fine sandy loam, 5 to 8 percent slopes
RuC2	Ruston fine sandy loam, 5 to 8 percent slopes, eroded
RuC3	Ruston fine sandy loam, 5 to 8 percent slopes, severely eroded
RuD	Ruston fine sandy loam, 8 to 12 percent slopes
RuD2	Ruston fine sandy loam, 8 to 12 percent slopes, eroded

SYMBOL	NAME
RuD3	Ruston fine sandy loam, 8 to 12 percent slopes, severely eroded
RuE	Ruston fine sandy loam, 12 to 17 percent slopes
RuE2	Ruston fine sandy loam, 12 to 17 percent slopes, eroded
RuE3	Ruston fine sandy loam, 12 to 17 percent slopes, severely eroded
RuF	Ruston fine sandy loam, 17 to 35 percent slopes
RuF2	Ruston fine sandy loam, 17 to 35 percent slopes, eroded
Sa	Sandy alluvial land
SfA	Savannah fine sandy loam, 0 to 2 percent slopes
SfB	Savannah fine sandy loam, 2 to 5 percent slopes
SfB2	Savannah fine sandy loam, 2 to 5 percent slopes, eroded
SfC2	Savannah fine sandy loam, 5 to 8 percent slopes, eroded
ShB	Shubuta fine sandy loam, 2 to 5 percent slopes
ShB2	Shubuta fine sandy loam, 2 to 5 percent slopes, eroded
ShC	Shubuta fine sandy loam, 5 to 8 percent slopes
ShC2	Shubuta fine sandy loam, 5 to 8 percent slopes, eroded
ShD	Shubuta fine sandy loam, 8 to 12 percent slopes
ShD2	Shubuta fine sandy loam, 8 to 12 percent slopes, eroded
SnC3	Shubuta sandy clay loam, 5 to 8 percent slopes, severely eroded
SnD3	Shubuta sandy clay loam, 8 to 12 percent slopes, severely eroded
StA	Stough fine sandy loam, 0 to 2 percent slopes
SuB2	Sumter clay, 2 to 5 percent slopes, eroded
SuB3	Sumter clay, 2 to 5 percent slopes, severely eroded
SuC2	Sumter clay, 5 to 8 percent slopes, eroded
SuD3	Sumter clay, 5 to 12 percent slopes, severely eroded
TfA	Tilden fine sandy loam, 0 to 2 percent slopes
TfB	Tilden fine sandy loam, 2 to 5 percent slopes
TfB2	Tilden fine sandy loam, 2 to 5 percent slopes, eroded
TfC2	Tilden fine sandy loam, 5 to 8 percent slopes, eroded
VaA	Vaiden clay, deep, 0 to 2 percent slopes
VaB	Vaiden clay, deep, 2 to 5 percent slopes
VaB2	Vaiden clay, deep, 2 to 5 percent slopes, eroded
VaC2	Vaiden clay, deep, 5 to 8 percent slopes, eroded
VaD2	Vaiden clay, deep, 8 to 12 percent slopes, eroded
VoA	Vaiden and Oktibbeha silt loams, deep, 0 to 2 percent slopes
VoB	Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes
VoC	Vaiden and Oktibbeha silt loams, deep, 5 to 8 percent slopes
VoD	Vaiden and Oktibbeha silt loams, deep, 8 to 12 percent slopes
Wa	Wahee fine sandy loam
Wp	West Point clay

Soil map constructed 1964 by Cartographic Division, Soil Conservation Service, USDA, from 1958 aerial photographs. Controlled mosaic based on Mississippi plane coordinate system, east zone, transverse Mercator projection. 1927 North American datum.

CLARKE COUNTY, MISSISSIPPI

CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Highways and roads

- Dual
- Good motor
- Poor motor
- Trail

Highway markers

- National Interstate
- U. S.
- State

Railroads

- Single track
- Multiple track
- Abandoned

Bridges and crossings

- Road
- Trail, foot
- Railroad
- Ferries
- Ford
- Grade
- R. R. over
- R. R. under
- Tunnel

- Buildings
- School
- Church
- Station

- Mines and Quarries
- Mine dump
- Pits, gravel or other

- Power lines
- Pipe lines
- Cemeteries
- Dams
- Levees

- Tanks
- Oil wells
- Forest fire or lookout station
- Sawmill

BOUNDARIES

- National or state
- County
- Township, U. S.
- Section line, corner
- Reservation
- Land grant

DRAINAGE

Streams

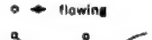
- Perennial
- Intermittent
  - Crossable with tillage implements
  - Not crossable with tillage implements

- Canals and ditches

Lakes and ponds

- Perennial
- Intermittent

- Wells



- Springs
- Marsh
- Wet spot

RELIEF

Escarpments

- Bedrock
- Other

- Prominent peaks

Depressions

	Large	Small
Crossable with tillage implements		
Not crossable with tillage implements		
Contains water most of the time		

SOIL SURVEY DATA

- Soil boundary and symbol

- Gravel
- Stones
- Rock outcrops
- Chert fragments
- Clay spot
- Sand spot
- Gumbo or scabby spot
- Made land
- Severely eroded spot
- Blowout, wind erosion
- Gullies